Nebraska Public Power District

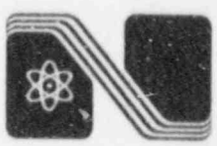
Cooper Nuclear Station

DEMONSTRATION OF COMPLIANCE WITH 10 CFR 50, APPENDIX I

REVISION 1 AND SUPPLEMENT 2

January 9, 1978

Rec'd 3-8-78



Prepared by

Dames & Moore
1550 Northwest Highway
Park Ridge, Illinois

Nebraska Public Power District

Cooper Nuclear Station

Demonstration of Compliance with 10CFR50, Appendix I Revision 1

January 9, 1978

FOREWORD

Revision 1 - January 9, 1978

Recent examination of the meteorological data collected at the Cooper Nuclear Station after the original Demonstration of Compliance with 10CFR50, Appendix I dated January 12, 1977 was written revealed that a data set for the period of July 1, 1976 to June 30, 1977 was superior to that used in the original analysis which were collected from March 1, 1970 to December 31, 1975. Better data recovery rates and more thorough quality control of the data established the superiority of the later data set.

In addition to the use of an improved data set, this Revision 1 includes the results of complying with Revision 1 - July 1977 of Regulatory Guide 1.111 "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors." The basic change in the Regulatory Guide prompting this Revision is that it allows using the Plume Element Model (PUFF) for the determination of χ/Q values. The original analyses to derive the χ/Q's were performed using a Constant Mean Wind Direction Model with adjustment factors provided in the original Regulatory Guide Guide 1.111.

Changes to this document occur in only Chapters 1, 4, and 5. The changes are indicated in two ways: (1) Revision 1 -1/78 has been typed in the lower right corner of all pages and (2)

vertical lines have been drawn in the right margins indicating changes or additions.

Supersedes Rev
of Jan 17, 1977

Table of Contents

CHAPTER 1

ATMOSPHERIC DIFFUSION ANALYSIS

FOR

ANNUAL AVERAGE RELATIVE CONCENTRATIONS,
CONCENTRATION DEPLETION, AND DEPOSITION
FOR APPENDIX I ANALYSIS
PER REGULATORY GUIDE 1.111

FOR THE

COOPER NUCLEAR STATION

NEBRASKA PUBLIC POWER DISTRICT
COLUMBUS, NEBRASKA

Revision 1
1/78

1.0 INTRODUCTION

On May 5, 1976, the Nuclear Regulatory Commission (NRC) published Appendix I to 10CFR Part 50 which set forth numerical guides for design objectives and limiting conditions for operation to meet the criterion "as low as practicable" regarding releases of radioactive effluents from light-water-cooled nuclear reactors. Section V.B. of Appendix I requires the holders of permits or licenses authorizing the operation of light-water-cooled reactors, for which application was filed prior to January 2, 1971, to file with the Commission by June 4, 1976:

1. Such information as is necessary to evaluate the means employed for keeping levels of radioactivity in effluents to unrestricted areas as low as practicable, including all such information as is required by paragraphs 50.34 (a), (b), and (c) not already contained in this application; and

2. Plans and proposed Technical Specifications developed for the purpose of keeping releases of radioactive materials in unrestricted areas during normal reactor operations, including expected operational occurrences, as low as practicable.

Guidelines, having been set forth to address Appendix I to 10 CFR Part 50 under the provisions of Section V.B., identify meteorological considerations to be consistent with Regulatory Guide 1.111 (RG 1.111), Revision 1 - July 1977, initially identified as Draft Regulatory Guide 1.DD. Based on the analytical procedures put forth in RG 1.111, estimates of relative concentration (χ/Q) and deposition (D/Q) are required to address Appendix I; such analyses are required at standard and critical distances utilizing recent representative on-site

meteorological data meeting the requirements of Regulatory Guide 1.23 (RG 1.23).

This report addresses the requirements stated above for the Nebraska Public Power District's Cooper Nuclear Station.

2.0 GENERAL REQUIREMENTS TO ADDRESS APPENDIX I TO 10 CFR PART 50

The following items have been identified as the meteorology-related requirements for presentation to the NRC to satisfy the intent of Appendix I:

1. Tabulated critical distances by sector (22.5 degrees centered on cardinal direction) for each of the following:

   a. Nearest site boundary.

   b. Nearest milk cow (to a distance of five miles).

   c. Nearest milk goat (to a distance of five miles).

   d. Nearest meat animal (to a distance of five miles).

   e. Nearest resident (to a distance of five miles).

   f. Nearest garden (500 $feet^2$) (to a distance of five miles).

2. Following RG 1.111 Guidelines, estimated values of χ/Q and D/Q at specified critical distances (above) and at standard distances (0.5, 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, and 45.0 miles).

3. Description of analytical procedure employed to obtain above estimates including validity and accuracy of the procedure, description of meteorological and plant parameters, and assumptions peculiar to the site.

4. Description of the meteorological data base.

5. Tabulated monthly and annual joint wind direction, wind speed, and stability class frequency tables with stability class determined from the vertical temperature gradient (ΔT) as specified in RG 1.23.

6. Description of representativeness and quality of available on-site data with respect to long-term climatology.

3.0 ANALYSIS AND PRESENTATION

Those items identified in Section 2.0 as general requirements for submittal to the NRC in compliance with Section V.B. of Appendix I to 10 CFR Part 50 have been addressed and are presented below.

3.1 Critical Distances

The critical distances identified in Section 2.0 as item "1" are summarized in Table 3.1.1. Distances greater than the specified 5-mile limit have been omitted.

3.2 Release Points

Information pertaining to the gaseous releases are given in Table 3.1.2. The releases from the Turbine Building, Radwaste Building, Augmented Radwaste Building, and the Reactor Building were treated as ground level-releases in the dispersion model. The Elevated Release Point (ERP) was treated as an elevated release. 1

3.3 Relative Concentration and Deposition Estimates

The relative concentration estimates (χ/Q) have been computed for both the undepleted (χ_o/Q) and depleted (χ_d/Q) cases at the critical and standard distances for ground and elevated release modes. Likewise, the relative deposition estimated (D/Q) have been computed at both sets of distances and release heights. The following key identifies the tabulated results: 1 1

	Critical Distances		Standard Distances	
	Elevated Release Point	Ground Release	Elevated Release Point	Ground Release
undepleted (χ_o/Q)	Table 3.2.1	Table 3.2.3	Table 3.2.2	Table 3.2.4
depleted (χ_d/Q)	Table 3.2.5	Table 3.2.7	Table 3.2.6	Table 3.2.8
deposition (D/Q)	Table 3.2.9	Table 3.2.11	Table 3.2.10	Table 3.2.12

Summarizing the results, the maximum (χ_o/Q), (χ_d/Q), and (D/Q) computed at the site boundary for the elevated release point are 8.8×10^{-8} sec/m^3 (NW), 8.7×10^{-8} sec/m^3 (NW), and 6.4×10^{-10}/m^2 (S), respectively. Also, the maxima for the ground-level release are 6.1×10^{-6} sec/m^3 (NNW), 5.4×10^{-6} sec/m^3 (NNW), and 1.2×10^{-8} /m^2 (N), respectively.

3.3.1 Diffusion Model Description and Assumptions

The Dames & Moore Puff model (PUFF) was used to calculate undepleted χ_o/Q, depleted χ_d/Q, and deposition D/Q for the ground and elevated releases presented herein. Table 3.1.2 presents the data used to parametrize each release.

PUFF is a modified version of the puff advection model MESODIF, developed by Start and Wendell (1974). These two models simulate a continuous release of effluents by the release of a series of puffs, but unlike the conventional continuous point source model in which a simple homogeneity in the wind field is assumed, each individual puff can be advected

and modified by non-homogenous meteorological conditions. Both PUFF and MESODIF account for spatial variation in wind speed and direction. In addition, PUFF includes routines to handle spatial variations in stability and mixing height, plume rise calculations, building wake correction, determination of release mode, decay, depletion, deposition, terrain influences on plume rise, sampling at polar coordinates, and sampling at polar coordinates, and sampling at discrete points of interest. Table 3.1.3 summarizes the important differences between MESODIF and PUFF.

The instantaneous contribution of an individual puff to a sampling point's total integrated concentration, after Slade (1968), is given by:

$$\chi(x,y) = \frac{2Q}{(2\pi)^{3/2}\sigma_r^2\sigma_z} \exp\left[-1/2\left(\frac{r^2}{\sigma_r^2} + \frac{he^2}{\sigma_z^2}\right)\right] \qquad (1)$$

where

$\chi(x,y)$ = the instantaneous ground-level concentration at coordinate (x,y), (grams/meter^3),

Q = the total effluent contained in the puff (grams),

σ_z = the standard deviation of effluent in the vertical direction (meters),

σ_r = the standard deviation of effluent in the horizontal direction (meters),

r = the distance from the center of the puff to the coordinate (x,y) (meters), and

h_e = the effective stack height (meters).

Using EQ (1), the total integrated concentrations are calculated in PUFF via:

$$TIC(x,y) = \sum_{i=1}^{N} \sum_{j=1}^{J} \sum_{k=1}^{K_i} \sum_{\ell=1}^{L_j} \left\{ \frac{\chi_{ijk\ell}(x,y)}{J\ L_j} \right\} \qquad (2)$$

where $TIC(x,y)$ = accumulated hourly concentration at grid point (x,y), (grams/meter^3),

N = number of sampling hours,

J = the number of advection steps per hour

K_i = the number of puffs released up to hour i,

L_j = the number of samples per advection step j,

$\chi_{ijk\ell}(x,y)$ = the instantaneous concentration Equation (1) at the coordinate (x,y), contributed from puff , during hour i, advection step j, and sampling step ℓ.

Depending upon the frequency of sampling this approximation will converge to the continuous point source at any level of accuracy required.

After Turner (1969), σ_z at any time and location is allowed to increase until a value of 0.80 times the mixing height has been reached. If previous values of σ_z already exceed this limit, they are held constant.

For effluent exhausted from release points that are higher than twice the height of adjacent solid structures, the effective release height, h_e, is determined from (Sangerdorf 1974):

$$h_e = h_s + \Delta h - h_t - h_c \qquad (3)$$

where

h_s = physical height of the release point, (meters),

Δh = plume rise above the release point (meters),

h_t = terrain height between the release point and the receptor location (meters),

h_c = correction for aerodynamic downwash (meters),

The plume rise (Δh) is calculated from methods suggested by Briggs (1969). For a momentum-dominated plume, the plume rise for neutral and unstable conditions is given by

$$\Delta h = 1.44 \left\{\frac{W_o}{\bar{u}}\right\}^{2/3} \left\{\frac{x}{d}\right\}^{1/3} d \qquad (4)$$

where

W_o = effluent exit velocity (feet/second),

d = inner diameter of the stack (feet)

$\bar{u}$ = mean wind speed (meters/second),

x = downwind distance from the release point

The result from Equation (4) is compared with

$$\Delta h = 3.0 \frac{W_o}{\bar{u}} d \qquad (5)$$

and the more conservative value is used.

For stable conditions, the plume rise is calculated from either one of the following two forms, and the smallest value of Δh is used: 1

$$\Delta h = 4.0 \left\{\frac{Fm}{s}\right\}^{1/4} \qquad (6)$$

$$\Delta h = 1.5 \left\{\frac{Fm}{\bar{u}}\right\}^{1/3} s^{-1/6} \qquad (7)$$

where

Fm = momentum flux parameter = $w_o^2 \left\{\frac{d}{2}\right\}^2$, (meters^4/second^2)

s = stability parameter = $\frac{g}{T}\frac{\partial\theta}{\partial z}$ (second^{-2}),

T = ambient air temperature (degree K)

$\frac{\partial\theta}{\partial z}$ = vertical potential temperature gradient (^{o}K/meter)

For bouyancy dominated plume, the rise of the plume under neutral and unstable conditions is calculated from the following equation:

$$\Delta h = 1.6\ F^{1/3}\ \bar{u}^{-1}\ x^{2/3},\ \text{if } x \leq x^* \tag{8}$$

$$\Delta h = \frac{1.6F^{1/3}x^{*2/3}\left[\frac{2}{5} + \frac{16}{25}\left(\frac{x}{x^*}\right) + \frac{11}{5}\left(\frac{x}{x^*}\right)^2\right]}{\bar{u}\ \left(1 + \frac{4x}{5x^*}\right)^2}, \tag{9}$$

$$\text{if } x > x^*$$

where

$$x^* = 0.52F^{2/5}h_s^{\ 3/5},\ \text{if } h_s < 1{,}000 \text{ feet} \tag{10}$$

$$x^* = 33F^{2/5},\ \text{if } h_s \geq 1{,}000 \text{ feet} \tag{11}$$

where

F = bouyance flux parameter = $4.3 \times 10^{-3} Q_h$ (feet^4/second^3)

Q_h = effluent heat content (calories/second)

At $x = 5x^*$, the plume is assumed to reach its maximum height, and Δh remains constant thereafter.

In stable conditions, Equation (8) is used to calculate the plume rise until a distance $x = 2.4\ \bar{u}\ s^{-1/2}$ is

reached, after which it is calculated from

$$\Delta h = 2.9 \left\{ \frac{F}{\bar{u}\ s} \right\}^{1/3} \qquad (12)$$

When the vertical exit velocity of the effluent is less than 1.5 times the horizontal wind speed, a correction for downwash is subtracted according to Gifford (1972):

$$h_c = 3(1.5 - W_o/\bar{u})\ d \qquad (13)$$

For plumes which are bouyant and also have a momentum contribution, the following formulation is used. 1

$$\Delta h = (\Delta h_B{}^3 + \Delta h_m{}^3)^{1/3} \qquad (13a)$$

where

Δh_B = the bouyant rise

Δh_m = the momentum rise

Δh = the combined rise

For effluent released from points less than or equal to the height of adjacent solid structures, a ground-level release is assumed (h_e = o).

On the other hand, for effluents released from vents or other points less than or equal to twice the height of adjacent solid structures, the effluent plume can be considered as an elevated release whenever the vertical exit velocity of the plume, W_o, is at least five times the horizontal wind speed, $\bar{u}$, at the height of release (Johnson, 1975). In this case, Equations (4) through (12) would be employed. However, in this report all these mixed mode releases were assumed to be ground-level releases, thus, the results are conservatively high.

If $W_o/\bar{u}$ is less than 1.0 or unknown, the effective release height, h_e, is set equal to zero. 1

For cases where the ratio of plume exit velocity to horizontal wind speed is between one and five, an entrainment coefficient, E_t, is determined (U.S. Nuclear Regulatory Commission, 1977):

$$E_t = 2.58 - 1.58 \left\{ \frac{W_o}{\bar{u}} \right\}, \text{ for } 1 \leq \frac{W_o}{\bar{u}} \leq 1.5 \qquad (14)$$

$$E_t = 0.3 - 0.06 \left\{ \frac{W_o}{\bar{u}} \right\}, \text{ for } 1.5 < \frac{W_o}{\bar{u}} \leq 5.0 \qquad (15)$$

Wind speeds representative of conditions at the actual release heights are used for the times when the release is considered to be elevated. Wind speeds measured at the 10-meter level are used for those times when the effluent plume is considered to be a ground release.

For releases where the effective release height, h_e, equates to zero (ground release), an adjustment is made to σ_z in Equation (1) which takes into consideration the initial mixing of the effluent plume within the building wake. This adjustment, after Yanskey, et al. (1966), can be expressed in the form of:

$$\sigma_z' = (\sigma_z^2 + \frac{v^2}{2\pi})^{1/2} \quad (16)$$

where

v = maximum adjacent building height either up or downwind from the release point (meters),

σ_z' = the modified σ_z to be used in the denominator of

It should also be noted that σ_z' is not allowed to exceed $\sqrt{3}\ \sigma_z$.

1

3.4 Data Base

On-site meteorological data from July 1, 1976 to June 30, 1977 were used in conjunction with the Dames & Moore PUFF model to generate the values of χ/Q, χ_o/Q and D/Q presented in this report. The puff model requires a data base in which no parameters are missing. The original data base

was therefore modified slightly to eliminate missing data using the following methods.

1. Estimation from other tower levels;
2. Linear interpolation in time (limited to short periods of missing data);
3. Substitution of similar meteorological periods.

The majority of the missing data were substituted using methods 1 and 2 above. Table 3.4.1 lists cases where the third method was used. The following criteria were used to identify similar meteorological conditions:

1. Period be of approximately the same date;
2. Period start and end at approximately the same time;
3. Similiar trends and magnitudes be observed in the parameters which are not missing;
4. Continuity in parameters at interfaces between missing and non-missing periods be reasonable.

The estimation procedure using method 1 varied according to the parameter being estimated. When the 10.67 to 96.93-meter stability class was missing, the stability class for the 47.24 to 96.96-meter level was directly substituted. Wind speed was derived from the following power law relationship:

$$U_H = U_L \left\{ \frac{Z_H}{Z_L} \right\}^{P_S} \qquad (17)$$

where

U_H = wind speed at height Z_H

U_L = wind speed at Z_L,

P = power law constant for stability class s.

Table 3.4.2 presents the power law coefficients as determined from the original data base. Missing wind directions were substituted using the following formulation:

$$\theta_H = \theta_L + \Delta\theta_s \qquad (18)$$

where

θ_H = the wind direction at height Z_H

θ_L = the wind direction at height Z_L

$\Delta\theta_s$ = the mean directional shear for stability class s.

Table 3.4.3 presents values of the directional shear as a function of stability for the unmodified data set.

3.5 Joint Frequency Tables

The joint frequency tables for the period July 1, 1976 to June 30, 1977 were generated on a monthly and annual basis for each stability class (A-G) and the composite (all classes) case, for the 96.93-meter and 10.67-meter wind sensor heights. These tables are provided in the Enclosure 2 information (Chapter 5).

3.6 Comparison of On-Site Data with Long-Term Data

Wind speed and direction data measured on-site for the period July 1, 1976 through June 30, 1977 were compared with the 1941-1970 standard climatological normals for the National Weather Service observation station at Eppley Airfield, Omaha, Nebraska located approximately 65 miles north-northwest of the Cooper Nuclear Station. The results are as follows: 1

	Eppley Airfield Omaha, Nebraska	Cooper Nuclear Station	
	approximately 10 meters	10.67 meters	96.93 meters
Mean Wind Speed (MPS)	3.3	4.4	6.1
Predominant Wind Direction	SSE	S	S

1

These results indicate that the on-site wind speed and direction data is reasonable representative of the long term regional meteorological conditions.

REFERENCES

Briggs, G.A., 1969, Plume Rise. AEC Critical Review Series, TID-25075, "Description of Valley Model-Version C9M3D," U.S. Environmental Protection Agency Dispersion Program, available from the United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, pp. 4-6.

Gifford, F.A., Jr., 1961, Use of routine meteorological observations for estimating atmospheric dispersion. Nuclear Safety, Vol. 2, No. 4., June.

_____, 1972, Atmospheric transport and dispersion over cities. Nuclear Safety, Vol. 13, pp. 391-403, Sept. - Oct.

Holzworth, G., 1971, Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution in the Contiguous United States, USEPA101.

Johnson, W.B., E. Shelar, R.E. Ruff, H.B. Singh, and L. Salas, 1975, Gas tracer study of roof-vent effluent diffusion at Millstone Nuclear Power Station. AIF/NESP-007b, Atomic Industrial Forum, Inc.

Sagendorf, J.F., 1974, A program for evaluating atmospheric dispersion from a nuclear power station. NOAA Tech. Memo. ERL-ARL-42.

_____ and C.R. Dickson, 1974, Diffusion under low wind speed inversion conditions. NOAA Technical Memo No. ERL-ARL-52.

Slade, D.H., Ed., 1968, Meteorology and Atomic Energy 1968. TID-24190, ESSA, Air Resources Laboratories, Silver Springs, MD.

Start, G.E., and L.L. Wendell, 1974, Regional effluent dispersion calculations considering spatial and temporal meteorological variations. NOAA Tech. Memo ERL-ARL-44.

Turner, D.B., 1969, Workbook of Atmospheric Dispersion Estimates. U.S. Department of Health, Education, and Welfare, Public Health Service, National Air Pollution Control Administration, Cincinnati, OH, 84 pp.

U.S. Nuclear Regulatory Commission, 1977, Regulatory Guide 1.111 (Revision 1). Methods for estimating atmoshperic transport and dispersion of gaseous effluents in routine release from light-water-cooled reactors. Washington, D.C.

Yanskey, G.R., E.H. Markee, Jr., and A.P. Richter, 1966, Climatography of national reactor testing station. Idaho Operations Office, USAEC, IDO-12048.

TABLE 3.1.1

SUMMARY OF CRITICAL DISTANCES (MILES)
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	0.65	-	-	2.4	1.8	1.8
NE	0.63	3.4	-	3.4	2.4	2.4
ENE	0.57	4.0	-	4.0	2.5	2.5
E	0.54	-	-	1.9	1.7	1.7
ESE	0.54	-	-	2.4	1.9	1.9
SE	0.64	-	-	-	2.2	-
SSE	0.84	-	-	3.5	3.5	-
S	0.82	-	-	4.4	4.4	4.4
SSW	0.84	-	-	3.7	3.7	3.7
SW	0.98	-	2.6	1.5	1.6	1.5
WSW	1.00	-	-	1.4	1.4	1.4
W	0.99	3.5	-	1.1	1.1	1.1
WNW	1.01	-	-	1.9	1.9	1.9
NW	0.81	3.7	-	1.2	1.1	1.2
NNW	0.71	-	-	2.0	1.8	1.8
N	0.71	-	-	4.3	2.8	3.5

Distances up to 5 miles from release point.

TABLE 3.1.2

Atmospheric Gaseous Release Points
Cooper Nuclear Generating Station
Nebraska Public Power District

STRUCTURE	REACTOR BUILDING	TURBINE BUILDING	RADWASTE BUILDING	AUGMENTED RADWASTE BUILDING	ELEVATED RELEASE POINT
Number of Ducts	1	2	1	1	1
Duct Size (inches)	96" x 48"	48" x 96"	24" x 96"	22" x 35"	14" I.D.
Height of Vent (feet Above Roof)	15	1.3	Horizontal Discharge at roof top	Horizontal Discharge at roof top	325 (above grade)
Flow Rate (cfm)	73405	101420 (both ducts)	40570	16500	3000
Flow Velocity (fps)	3.82	26.4	42.3	50.9	46.7
Exhaust - Winter	70	70	70	70	60
Temp (^{O}F)-Summer	90	90	90	90	90
Release Mode	Partial Elevated	Ground Level	Ground Level	Ground Level	Ground Level

TABLE 3.1.3

A COMPARISON OF MESODIF AND PUFF

ITEM	MESODIF	PUFF
Method for calculating σ_r and σ_z	Empirical relationship derived from data obtained at the Idaho Testing Facility	Gifford (1961)
Release mode considered	Ground-level release only	Either elevated- or ground-release or both (mixed mode RG1.111 Formulation)
Plume rise calculation	No	Yes (RG1.111 Formulation)
Building wake correction	No	Yes (RG1.111 Formulation)
Aerodynamic downwash considered	No	Yes (RG1.111 Formulation)
Maximum size of grid system used in the computation (X x Y)	13 x 16	20 x 20
Spatial variability in mixing height and stability allowed	No	Yes
Sampling frequency determination	Function of the distance travelled of each puff and a specified distance increment	Function of the size and speed of each puff
Sampling point option	At rectangular coordinate grid points only	Either at rectangular coordinate grid points, or at polar coordinate grid points, or at any specified point, or all of these
Decay	No	2.26 days and 8 days
Terrain Interaction	No	Yes (Egar (1975) as suggested by RG1.111)
Deposition and depletion	No	Slade (1968)[1]
Vertical Variation of wind speed	No	Site specific power law

[1]Using depositions velocities which are fitted to RG1.111 curves.

TABLE 3.2.1

UNDEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
ELEVATED RELEASE POINT (ERP)
CRITICAL DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	1.0E-08	-	-	2.2E-08	2.2E-08	2.2E-08
NE	7.3E-09	1.4E-08	-	1.4E-08	1.4E-08	1.4E-08
ENE	7.6E-09	1.0E-08	-	1.0E-08	1.4E-08	1.4E-08
E	6.9E-09	-	-	1.4E-08	1.4E-08	1.4E-08
ESE	5.5E-09	-	-	1.0E-08	1.1E-08	1.1E-08
SE	9.9E-09	-	-		1.7E-08	-
SSE	1.8E-08	-	-	2.0E-08	2.0E-08	
S	2.5E-08	-	-	2.5E-08	2.5E-08	2.5E-08
SSW	2.0E-08	-	-	1.6E-08	1.6E-08	1.6E-08
SW	1.9E-08	-	1.5E-08	5.0E-08	4.3E-08	5.0E-08
WSW	8.0E-08	-	-	5.6E-08	5.6E-08	5.6E-08
W	2.7E-08	2.2E-08	-	8.2E-08	8.2E-08	8.2E-08
WNW	3.2E-08		-	6.6E-08	6.6E-08	6.6E-08
NW	1.7E-08	4.8E-08	-	1.8E-08	2.2E-08	1.8E-08
NNW	1.2E-08	-	-	4.9E-08	3.9E-08	3.9E-08
N	1.2E-08	-	-	2.1E-08	3.0E-08	2.5E-08

TABLE 3.2.2

UNDEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
ELEVATED RELEASE POINT - STANDARD DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	DISTANCE (miles)									
SECTOR	.5	1.5	2.5	3.5	4.5	7.5	15.	25.	35.	45.
NNE	6.7E-09	2.3E-08	2.2E-08	1.8E-08	1.5E-08	1.9E-08	5.8E-09	4.7E-09	3.0E-09	1.8E-09
NE	6.1E-09	1.4E-08	1.4E-08	1.3E-08	1.1E-08	1.5E-08	6.9E-09	2.7E-09	2.4E-09	1.8E-09
ENE	7.0E-09	1.4E-08	1.4E-08	1.2E-08	9.3E-09	1.3E-08	2.9E-09	3.7E-09	1.5E-09	9.4E-10
E	6.5E-09	1.4E-08	1.3E-08	1.2E-08	9.5E-09	1.5E-08	4.0E-09	2.3E-09	1.3E-09	3.0E-10
ESE	5.2E-09	1.2E-08	1.0E-08	9.8E-09	7.9E-09	7.3E-09	4.1E-09	1.8E-09	1.2E-09	6.3E-10
SE	8.2E-09	1.9E-08	1.6E-08	1.4E-08	1.2E-08	1.0E-08	3.7E-09	1.6E-09	1.3E-09	6.5E-10
SSE	1.1E-08	3.2E-08	2.3E-08	2.0E-08	3.4E-08	2.6E-08	6.1E-09	2.2E-09	2.3E-09	1.2E-09
S	1.9E-08	3.4E-08	3.3E-08	2.6E-08	2.5E-08	1.6E-08	4.8E-09	2.4E-09	1.4E-09	1.1E-09
SSW	1.0E-08	4.3E-08	1.7E-08	1.7E-08	1.4E-08	9.5E-09	2.5E-09	1.2E-09	9.9E-10	5.1E-10
SW	4.4E-09	5.0E-08	1.7E-08	1.1E-08	1.1E-08	9.3E-09	3.1E-09	1.5E-09	9.4E-10	7.3E-10
WSW	4.1E-09	6.6E-08	3.2E-08	2.8E-08	1.2E-08	6.6E-09	4.1E-09	1.6E-09	1.1E-09	5.0E-10
W	5.6E-09	6.8E-08	3.8E-08	2.2E-08	1.8E-08	6.4E-09	4.1E-09	1.3E-09	8.2E-10	4.9E-10
WNW	6.1E-09	8.0E-08	5.2E-08	3.4E-08	2.1E-08	9.5E-09	3.2E-09	1.6E-09	1.0E-09	6.6E-10
NW	4.8E-09	8.8E-08	7.4E-08	5.2E-08	3.3E-08	1.4E-08	7.2E-09	3.4E-09	1.9E-09	1.3E-09
NNW	8.4E-09	2.7E-08	7.9E-08	6.9E-08	2.2E-08	2.1E-08	5.5E-09	3.1E-09	2.2E-09	1.6E-09
N	7.5E-09	3.5E-08	3.3E-08	2.5E-08	2.0E-08	1.6E-08	6.8E-09	5.2E-09	3.4E-09	1.1E-09

TABLE 3.2.3

UNDEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
GROUND LEVEL RELEASE POINT
CRITICAL DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	1.6E-06	-	-	2.3E-07	3.9E-07	3.9E-07
NE	1.4E-06	1.3E-07	-	1.3E-07	1.9E-07	1.9E-07
ENE	1.7E-06	6.5E-08	-	6.5E-08	1.5E-07	1.5E-07
E	1.9E-06	-	-	2.2E-07	2.6E-07	2.6E-07
ESE	2.1E-06	-	-	1.6E-07	2.5E-07	2.5E-07
SE	1.6E-06	-	-	-	2.0E-07	-
SSE	1.6E-06	-	-	1.5E-07	1.5E-07	-
S	2.1E-06	-	-	1.5E-07	1.5E-07	1.5E-07
SSW	1.2E-06	-	-	1.0E-07	1.0E-07	1.0E-07
SW	5.7E-07	-	1.5E-07	2.6E-07	2.5E-07	2.6E-07
WSW	5.9E-07	-	-	3.2E-07	3.2E-07	3.2E-07
W	6.4E-07	1.0E-07	-	5.3E-07	5.3E-07	5.3E-07
WNW	9.6E-07	-	-	3.4E-07	3.4E-07	3.4E-07
NW	2.2E-06	1.9E-07	-	4.9E-07	1.2E-06	4.9E-07
NNW	3.4E-06	-	-	6.0E-07	7.1E-07	7.1E-07
N	2.8E-06	-	-	1.7E-07	3.2E-07	2.2E-07

1

Table 3.2.4

UNDEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
GROUND LEVEL RELEASE POINT - STANDARD DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	Distance (Miles)									
Sector	.5	1.5	2.5	3.5	4.5	7.5	15.	25.	35.	45.
NNE	3.2E-06	5.5E-07	2.2E-07	1.5E-07	8.0E-08	4.4E-08	1.2E-08	4.9E-09	3.2E-09	2.4E-09
NE	2.0E-06	3.3E-07	1.8E-07	1.2E-07	6.1E-08	3.1E-08	9.2E-09	4.1E-09	2.6E-09	1.4E-09
ENE	2.2E-06	3.9E-07	1.5E-07	8.1E-08	5.4E-08	2.0E-08	7.4E-09	3.1E-09	1.6E-09	8.0E-10
E	2.2E-06	3.1E-07	1.5E-07	7.2E-08	5.5E-08	2.3E-08	6.3E-09	3.1E-09	1.8E-09	9.6E-10
ESE	2.4E-06	3.9E-07	1.5E-07	7.8E-08	5.7E-08	2.7E-08	7.4E-09	2.6E-09	1.3E-09	8.1E-10
SE	2.4E-06	3.9E-07	1.6E-07	1.2E-07	6.1E-08	2.5E-08	6.5E-09	1.8E-09	1.0E-09	7.8E-10
SSE	3.8E-06	6.0E-07	2.6E-07	1.5E-07	9.6E-08	4.2E-08	8.7E-09	2.8E-09	1.7E-09	1.2E-09
S	4.6E-06	8.1E-07	3.7E-07	2.0E-07	1.4E-07	6.6E-08	1.8E-08	6.4E-09	3.6E-09	2.1E-09
SSW	2.6E-06	5.0E-07	2.1E-07	1.1E-07	8.4E-08	5.5E-08	5.6E-09	1.5E-09	8.2E-10	4.8E-10
SW	1.9E-06	2.6E-07	1.8E-07	8.1E-08	6.2E-08	2.0E-08	5.2E-09	1.0E-09	3.9E-10	2.5E-10
WSW	2.0E-06	2.8E-07	1.7E-07	9.0E-08	6.4E-08	1.7E-08	3.6E-09	1.3E-09	7.4E-10	5.1E-10
W	1.6E-06	3.7E-07	1.4E-07	1.0E-07	6.5E-08	1.9E-08	6.1E-09	2.4E-09	1.1E-09	6.0E-10
WNW	3.1E-06	4.9E-07	2.2E-07	1.2E-07	1.0E-07	3.7E-08	1.0E-08	4.1E-09	2.1E-09	1.2E-09
NW	4.9E-06	7.8E-07	3.4E-07	2.2E-07	1.3E-07	6.5E-08	1.9E-08	5.0E-09	2.8E-09	2.0E-09
NNW	6.1E-06	9.7E-07	4.1E-07	2.5E-07	1.7E-07	9.5E-08	2.9E-08	1.2E-08	5.8E-09	1.6E-09
N	5.2E-06	8.9E-07	3.9E-07	2.2E-07	1.6E-07	7.4E-08	2.4E-08	1.1E-08	6.1E-09	3.5E-09

TABLE 3.2.5

DEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
ELEVATED RELEASE POINT (ERP)
CRITICAL DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	9.8E-09	-	-	2.1E-08	2.2E-08	2.2E-08
NE	7.2E-09	1.4E-08	-	1.4E-08	1.4E-08	1.4E-08
ENE	7.5E-09	9.9E-09	-	9.9E-09	1.4E-08	1.4E-08
E	6.7E-09	-	-	1.3E-08	1.3E-08	1.3E-08
ESE	5.4E-09	-	-	1.0E-08	1.1E-08	1.1E-08
SE	9.8E-09	-	-	-	1.6E-08	-
SSE	1.8E-08	-	-	2.0E-08	2.0E-08	-
S	2.4E-08	-	-	2.4E-08	2.4E-08	2.4E-08
SSW	2.0E-08	-	-	1.6E-08	1.6E-08	1.6E-08
SW	1.9E-08	-	1.5E-08	4.9E-08	4.3E-08	4.9E-08
WSW	8.0E-08	-	-	5.5E-08	5.5E-08	5.5E-08
W	2.6E-08	2.1E-08	-	8.1E-08	8.1E-08	8.1E-08
WNW	3.1E-08	-	-	6.5E-08	6.5E-08	6.5E-08
NW	1.7E-08	4.8E-08	-	1.8E-08	2.2E-08	1.8E-08
NNW	1.2E-08	-	-	4.9E-08	3.9E-08	3.9E-08
N	1.2E-08	-	-	2.0E-08	2.9E-08	2.4E-08

TABLE 3.2.6

DEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
ELEVATED RELEASE POINT - STANDARD DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	DISTANCE (miles)									
SECTOR	.5	1.5	2.5	3.5	4.5	7.5	15.	25.	35.	45.
NNE	6.6E-09	2.2E-08	2.1E-08	1.7E-08	1.5E-08	1.8E-08	5.4E-09	4.5E-09	2.8E-09	1.6E-09
NE	6.0E-09	1.4E-08	1.4E-08	1.3E-08	1.1E-08	1.5E-08	6.5E-09	2.5E-09	2.2E-09	1.7E-09
ENE	6.9E-09	1.3E-08	1.4E-08	1.1E-08	8.8E-09	1.3E-08	2.7E-09	3.5E-09	1.4E-09	8.6E-10
E	6.4E-09	1.3E-08	1.3E-08	1.1E-08	9.0E-09	1.5E-08	3.9E-09	2.2E-09	1.2E-09	2.6E-10
ESE	5.1E-09	1.1E-08	1.0E-08	9.5E-09	7.6E-09	6.9E-09	3.9E-09	1.6E-09	1.1E-09	5.6E-10
SE	8.1E-09	1.9E-08	1.6E-08	1.3E-08	1.1E-08	9.6E-09	3.4E-09	1.4E-09	1.1E-09	5.5E-10
SSE	1.1E-08	3.1E-08	2.3E-08	2.0E-08	3.3E-08	2.5E-08	5.6E-09	1.9E-09	2.0E-09	9.8E-10
S	1.9E-08	3.3E-08	3.2E-08	2.5E-08	2.4E-08	1.6E-08	4.4E-09	2.0E-09	1.1E-09	8.3E-10
SSW	1.0E-08	4.3E-08	1.7E-08	1.6E-08	1.4E-08	9.0E-09	2.3E-09	1.0E-09	8.6E-10	4.2E-10
SW	4.3E-09	4.9E-08	1.6E-08	1.1E-08	1.0E-08	9.0E-09	2.9E-09	1.4E-09	8.4E-10	6.4E-10
WSW	4.0E-09	6.6E-08	3.2E-08	1.7E-08	1.1E-08	6.3E-09	3.9E-09	1.5E-09	9.5E-10	4.2E-10
W	5.5E-09	6.8E-08	3.7E-08	2.1E-08	1.7E-08	6.0E-09	3.8E-09	1.1E-09	6.8E-10	4.0E-10
WNW	6.0E-09	7.9E-08	5.1E-08	3.3E-08	2.1E-08	9.0E-09	3.0E-09	1.4E-09	8.8E-10	5.5E-10
NW	4.7E-09	8.7E-08	7.3E-08	5.1E-08	3.2E-08	1.3E-08	6.9E-09	3.1E-09	1.7E-09	1.2E-09
NNW	8.3E-09	2.6E-08	7.8E-08	6.8E-08	2.1E-08	2.1E-08	5.1E-09	2.8E-09	2.0E-09	1.5E-09
N	7.3E-09	3.5E-08	3.2E-08	2.4E-08	1.9E-08	1.5E-08	6.3E-09	4.8E-09	3.1E-09	9.4E-10

TABLE 3.2.7

DEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
GROUND LEVEL RELEASE POINT
CRITICAL DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	1.4E-06	-	-	1.9E-07	3.3E-07	3.2E-07
NE	1.2E-06	9.9E-08	-	9.9E-08	1.5E-07	1.5E-07
ENE	1.5E-06	4.9E-08	-	4.9E-08	1.2E-07	1.2E-07
E	1.6E-06	-	-	1.8E-07	2.1E-07	2.1E-07
ESE	1.9E-06	-	-	1.3E-07	2.0E-07	2.0E-07
SE	1.4E-06	-	-	-	1.6E-07	-
SSE	1.4E-06	-	-	1.2E-07	1.2E-07	-
S	1.8E-06	-	-	1.1E-07	1.1E-07	1.1E-07
SSW	1.0E-06	-	-	7.6E-08	7.6E-08	7.6E-08
SW	4.8E-07	-	1.2E-07	2.2E-07	2.0E-07	2.2E-07
WSW	5.0E-07	-	-	2.6E-07	2.6E-07	2.6E-07
W	5.4E-07	7.7E-08	-	4.4E-07	4.4E-07	4.4E-07
WNW	7.9E-07	-	-	2.7E-07	2.7E-07	2.7E-07
NW	1.8E-06	1.5E-07	-	4.0E-07	1.0E-06	4.0E-07
NNW	2.9E-06	-	-	4.9E-07	5.9E-07	5.9E-07
N	2.5E-06	-	-	1.3E-07	2.6E-07	1.7E-07

TABLE 3.2.8

DEPLETED MEAN RELATIVE CONCENTRATION (sec/m^3)
GROUND LEVEL RELEASE POINT - STANDARD DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	DISTANCE (miles)									
SECTOR	.5	1.5	2.5	3.5	4.5	7.5	15.	25.	35.	45.
NNE	2.8E-06	4.5E-07	1.7E-07	1.1E-07	6.1E-08	3.2E-08	7.8E-09	2.7E-09	1.6E-09	1.1E-09
NE	1.7E-06	2.8E-07	1.4E-07	9.1E-08	4.6E-08	2.2E-08	5.7E-09	2.2E-09	1.2E-09	5.6E-10
ENE	1.9E-06	2.4E-07	1.2E-07	6.2E-08	4.0E-08	1.4E-08	4.7E-09	1.7E-09	7.7E-10	3.3E-10
E	1.9E-06	2.5E-07	1.2E-07	5.5E-08	4.1E-08	1.6E-08	3.9E-09	1.5E-09	8.3E-10	3.9E-10
ESE	2.1E-06	3.2E-07	1.2E-07	6.0E-08	4.3E-08	1.9E-08	4.6E-09	1.5E-09	6.3E-10	3.9E-10
SE	2.1E-06	3.2E-07	1.3E-07	9.0E-08	4.6E-08	1.7E-08	3.9E-09	9.5E-10	5.0E-10	3.6E-10
SSE	3.3E-06	5.0E-07	2.1E-07	1.2E-07	7.3E-08	3.0E-08	5.4E-09	1.6E-09	8.5E-10	5.2E-10
S	4.0E-06	6.7E-07	3.0E-07	1.6E-07	1.1E-07	4.8E-08	1.2E-08	3.7E-09	1.9E-09	9.4E-10
SSW	2.3E-06	4.2E-07	1.7E-07	8.1E-08	6.3E-08	3.9E-08	3.4E-09	8.4E-10	4.2E-10	2.1E-10
SW	1.7E-06	2.2E-07	1.4E-07	6.1E-08	4.5E-08	1.4E-08	3.1E-09	5.8E-10	1.8E-10	1.1E-10
WSW	1.7E-06	2.3E-07	1.4E-07	6.8E-08	4.7E-08	1.2E-08	2.1E-09	7.0E-10	3.8E-10	2.5E-10
W	1.4E-06	3.0E-07	1.1E-07	7.7E-08	4.8E-08	1.3E-08	3.7E-09	1.2E-09	5.0E-10	2.7E-10
WNW	2.7E-06	4.0E-07	1.7E-07	9.2E-08	7.6E-08	2.7E-08	6.3E-09	2.3E-09	1.0E-09	5.8E-10
NW	4.1E-06	6.5E-07	2.7E-07	1.7E-07	1.0E-07	4.7E-08	1.2E-08	2.9E-09	1.5E-09	9.3E-10
NNW	5.4E-06	8.1E-07	3.3E-07	1.9E-07	1.3E-07	6.9E-08	1.9E-08	6.5E-09	3.0E-09	7.6E-10
N	4.6E-06	7.5E-07	3.1E-07	1.7E-07	1.3E-07	5.4E-08	1.5E-08	5.9E-09	3.0E-09	1.6E-09

TABLE 3.2.9

MEAN RELATIVE DEPOSITION (/m^2)
ELEVATED RELEASE POINT
CRITICAL DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	3.4E-10	-	-	1.9E-10	2.5E-10	2.5E-10
NE	1.9E-10	8.7E-11	-	8.7E-11	1.3E-10	1.3E-10
ENE	1.4E-10	5.2E-11	-	5.2E-11	8.7E-11	8.7E-11
E	9.6E-11	-	-	7.9E-11	8.6E-11	8.6E-11
ESE	7.8E-11	-	-	6.9E-11	8.4E-11	8.4E-11
SE	2.3E-10	-	-	-	1.6E-10	-
SSE	4.4E-10	-	-	1.7E-10	1.7E-10	-
S	5.8E-10	-	-	1.6E-10	1.6E-10	1.6E-10
SSW	3.2E-10	-	-	9.1E-11	9.1E-11	9.1E-11
SW	1.5E-10	-	7.8E-11	2.1E-10	1.9E-10	2.1E-10
WSW	3.3E-10	-	-	2.1E-10	2.1E-10	2.1E-10
W	2.1E-10	9.8E-11	-	4.6E-10	4.6E-10	4.6E-10
WNW	2.6E-10	-	-	3.0E-10	3.0E-10	3.0E-10
NW	1.9E-10	1.2E-10	-	1.4E-10	2.1E-10	1.4E-10
NNW	2.4E-10	-	-	2.8E-10	2.7E-10	2.7E-10
N	3.5E-10	-	-	1.2E-10	2.0E-10	1.5E-10

1

TABLE 3.2.10

MEAN RELATIVE DEPOSITION (m^{-2})

ELEVATED RELEASE POINT - STANDARD DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

DISTANCE (miles)

SECTOR	.5	1.5	2.5	3.5	4.5	7.5	15.	25.	35.	45.
NNE	2.6E-10	3.0E-10	1.8E-10	1.3E-10	9.2E-11	5.7E-11	2.3E-11	1.3E-11	8.1E-12	5.8E-12
NE	1.9E-10	2.0E-10	1.2E-10	8.2E-11	6.1E-11	4.0E-11	1.6E-11	8.3E-12	6.0E-12	3.8E-12
ENE	1.4E-10	1.4E-10	8.7E-11	6.2E-11	4.5E-11	2.9E-11	1.1E-11	5.7E-12	3.8E-12	2.6E-12
E	9.6E-11	9.5E-11	6.4E-11	4.6E-11	3.6E-11	2.3E-11	7.6E-12	3.7E-12	2.5E-12	8.5E-13
ESE	7.7E-11	1.0E-10	6.6E-11	4.8E-11	3.8E-11	2.3E-11	1.2E-11	5.2E-12	3.5E-12	2.0E-12
SE	2.3E-10	2.3E-10	1.4E-10	1.0E-10	7.5E-11	4.0E-11	1.7E-11	7.5E-12	4.8E-12	3.3E-12
SSE	4.2E-10	4.5E-10	2.6E-10	1.7E-10	1.6E-10	7.7E-11	3.3E-11	1.6E-11	1.1E-11	7.6E-12
S	6.4E-10	5.1E-10	3.0E-10	2.0E-10	1.5E-10	7.2E-11	2.9E-11	1.6E-11	1.1E-11	6.7E-12
SSW	3.0E-10	3.4E-10	1.4E-10	9.7E-11	7.2E-11	3.5E-11	1.3E-11	6.5E-12	4.9E-12	2.6E-12
SW	7.9E-11	2.1E-10	8.4E-11	5.0E-11	4.0E-11	2.1E-11	7.4E-12	3.8E-12	2.4E-12	1.8E-12
WSW	5.7E-11	2.3E-10	1.0E-10	6.2E-11	4.3E-11	2.3E-11	8.5E-12	4.3E-12	2.7E-12	1.8E-12
W	1.0E-10	3.4E-10	1.6E-10	9.8E-11	6.9E-11	2.9E-11	1.3E-11	6.2E-12	3.4E-12	2.0E-12
WNW	1.2E-10	4.1E-10	2.1E-10	1.3E-10	8.3E-11	3.9E-11	1.4E-11	7.0E-12	4.1E-12	2.6E-12
NW	1.2E-10	3.8E-10	2.1E-10	1.3E-10	8.2E-11	4.1E-11	1.7E-11	1.0E-11	6.3E-12	3.9E-12
NNW	2.3E-10	2.6E-10	3.0E-10	2.0E-10	1.1E-10	6.0E-11	2.1E-11	1.1E-11	6.1E-12	3.9E-12
N	2.5E-10	3.7E-10	2.3E-10	1.5E-10	1.2E-10	7.1E-11	2.9E-11	1.7E-11	1.3E-11	5.2E-12

TABLE 3.2.11

MEAN RELATIVE DEPOSITION ($/m^2$)
GROUND LEVEL RELEASE POINT
CRITICAL DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	4.4E-09	-	-	5.6E-10	9.1E-10	9.1E-10
NE	3.4E-09	2.1E-10	-	2.1E-10	3.6E-10	3.6E-10
ENE	3.2E-09	1.3E-10	-	1.3E-10	2.7E-10	2.7E-10
E	3.5E-09	-	-	4.2E-10	5.0E-10	5.0E-10
ESE	4.7E-09	-	-	3.7E-10	5.5E-10	5.5E-10
SE	4.2E-09	-	-	-	4.9E-10	1.0E+20
SSE	4.1E-09	-	-	3.5E-10	3.5E-10	
S	3.8E-09	-	-	2.4E-10	2.4E-10	2.4E-10
SSW	1.6E-09	-	-	1.4E-10	1.4E-10	1.4E-10
SW	9.1E-10	-	2.0E-10	4.4E-10	4.1E-10	4.4E-10
WSW	8.9E-10	-	-	5.1E-10	5.1E-10	5.1E-10
W	1.2E-09	1.5E-10	-	9.5E-10	9.5E-10	9.5E-10
WNW	1.7E-09	-	-	5.9E-10	5.9E-10	5.9E-10
NW	4.5E-09	3.7E-10	-	6.7E-10	2.6E-09	6.7E-10
NNW	5.9E-09	-	-	1.0E-09	1.2E-09	1.2E-09
N	6.6E-09	-	-	3.4E-10	6.7E-10	4.6E-10

TABLE 3.2.12

MEAN RELATIVE DEPOSITION (m^{-2})
GROUND LEVEL RELEASE POINT - STANDARD DISTANCES
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	DISTANCE (miles)									
SECTOR	.5	1.5	2.5	3.5	4.5	7.5	15.	25.	35.	45.
NNE	8.0E-09	1.2E-09	5.2E-10	3.1E-10	2.0E-10	9.9E-11	3.3E-11	1.6E-11	9.6E-12	6.0E-12
NE	5.1E-09	7.6E-10	3.4E-10	2.0E-10	1.3E-10	6.9E-11	2.4E-11	1.1E-11	6.7E-12	4.1E-12
ENE	4.0E-09	6.1E-10	2.7E-10	1.6E-10	1.1E-10	4.8E-11	2.0E-11	7.6E-12	3.9E-12	2.5E-12
E	4.0E-09	6.1E-10	2.8E-10	1.6E-10	1.1E-10	5.0E-11	1.8E-11	8.0E-12	4.2E-12	2.3E-12
ESE	5.3E-09	8.2E-10	3.5E-10	2.0E-10	1.4E-10	6.7E-11	2.1E-11	9.6E-12	5.6E-12	3.8E-12
SE	6.4E-09	9.6E-10	3.9E-10	2.4E-10	1.5E-10	7.1E-11	2.5E-11	1.1E-11	6.8E-12	4.1E-12
SSE	1.0E-08	1.5E-09	6.1E-10	3.5E-10	2.3E-10	1.1E-10	3.9E-11	1.8E-11	1.1E-11	6.5E-12
S	8.7E-09	1.4E-09	5.8E-10	3.3E-10	2.3E-10	1.1E-10	4.0E-11	1.8E-11	1.0E-11	6.3E-12
SSW	3.7E-09	6.0E-10	2.6E-10	1.5E-10	1.0E-10	5.9E-11	1.5E-11	5.0E-12	3.0E-12	1.8E-12
SW	2.9E-09	4.4E-10	2.2E-10	1.2E-10	8.3E-11	3.5E-11	1.1E-11	3.0E-12	1.4E-12	8.7E-13
WSW	2.8E-09	4.6E-10	2.2E-10	1.3E-10	9.0E-11	3.7E-11	1.1E-11	4.2E-12	2.2E-12	1.4E-12
W	3.6E-09	5.9E-10	2.6E-10	1.5E-10	1.0E-10	4.6E-11	1.7E-11	6.9E-12	3.8E-12	2.2E-12
WNW	5.6E-09	8.7E-10	3.8E-10	2.3E-10	1.6E-10	7.3E-11	2.5E-11	1.0E-11	6.2E-12	3.8E-12
NW	1.0E-08	1.6E-09	6.8E-10	4.1E-10	2.7E-10	1.3E-10	4.5E-11	1.8E-11	1.1E-11	6.8E-12
NNW	1.1E-08	1.6E-09	6.9E-10	4.1E-10	2.8E-10	1.4E-10	5.2E-11	2.3E-11	1.3E-11	5.2E-12
N	1.2E-08	1.9E-09	8.1E-10	4.6E-10	3.2E-10	1.5E-10	5.8E-11	2.7E-11	1.7E-11	1.0E-11

TABLE 3.3.1

RELEASE PARAMETERS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

		Elevated Release Point	Ground Level Release
1.	Release Point Above Ground (feet)	325	---
2.	Effective Stack Diameter (feet)	1.17	---
3.	Exit Velocity (feet/sec)	46.79	---
4.	Effective Building Height Relative to the Release Point (feet)	158	146

1

TABLE 3.4.1

ON-SITE METEOROLOGICAL DATA BASE SUBSTITUTIONS WHEN
PARAMETER IS MISSING AT BOTH LEVELS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

PERIOD		PARAMETER	SUBSTITUTION
FROM	TO		
0800 July 4,76	0900 July 4,76	WD1	Linear Interpolation
1300 July 6,76	0400 July 7,76	WD1,WD2	1300 July 8,76 to 0400 July 9,76
0900 July 7,76	1100 July 7,76	WD1	Linear Interpolation
2300 July 9,76	0000 July 10,76	WD1	Linear Interpolation
0700 July 15,76	0900 July 15,76	WD1	Linear Interpolation
0900 July 15,76	0900 July 15,76	WS2	0800 July 15,76 to 0800 July 15,76
1700 July 15,76	1800 July 15,76	DT2	Linear Interpolation
0500 July 16,76	0700 July 16,76	WD1	Linear Interpolation
0700 July 23,76	0700 July 23,76	DT1,DT2	0700 July 17,76 to 0700 July 17,76
1500 July 23,76	1500 July 23,76	DT1,DT2	1600 July 17,76 to 1600 July 17,76
1900 August 13,76	1900 August 13,76	DT2	Linear Interpolation
1200 August 16,76	1300 August 16,76	DT2	LInear Interpolation
0800 August 23,76	1000 August 23,76	DT2	Linear Interpolation
1100 September 7,76	1100 September 7,76	DT1,DT2	1100 September 6,76 to 1100 September 6,76
1500 September 7,76	1500 September 7,76	DT1,DT2	1500 September 6,76 to 1500 September 6,76
0800 September 8,76	0800 September 8,76	DT1,DT2	0800 September 5,76 to 0800 September 5,76
1900 September 8,76	1900 September 8,76	DT1,DT2	1900 September 5,76 to 1900 September 5,76
2000 September 8,76	2000 September 8,76	DT1,DT2	2100 August 29,76 to 2100 August 29,76
1200 September 10,76	1200 September 10,76	DT1,DT2	1100 August 30,76 to 1100 August 30,76
0800 September 24,76	0800 September 24,76	DT1,DT2	0800 September 21,76 to 0800 September 21,76
0600 September 27,76	0600 September 27,76	DT1,DT2	0700 September 24,76 to 0700 September 24, 76
0700 September 27,76	0700 September 27,76	DT1,DT2	0700 September 23,76 to 0700 September 23,76
0000 September 28,76	0000 September 28,76	DT1,DT2	0000 September 24,76 to 0000 September 24,76
0100 September 28,76	0100 September 28,76	DT1,DT2	0100 September 29,76 to 0100 September 29,76
2100 September 28,76	2100 September 28,76	DT1,DT2	2100 September 29,76 to 2100 September 29,76
1400 October 7,76	1500 October 7,76	DT2	Linear Interpolation
0900 October 17,76	0900 October 17,76	DT1,DT2	0900 October 11,76 to 0900 October 11,76
1800 October 17,76	1800 October 17,76	DT1,DT2	1800 October 11,76 to 1800 October 11,76
0600 October 27,76	0700 October 27,76	DT2	Linear Interpolation
2000 October 29,76	2000 October 29,76	DT1,DT2	2000 October 28,76 to 2000 October 28,76
0500 October 30,76	0500 October 30,76	DT1,DT2	0500 October 29,76 to 0500 October 29,76
2200 November 5,76	2300 November 5,76	DT2	Linear Interpolation
2200 November 15,76	2300 November 15,76	DT2	Linear Interpolation
1800 November 25,76	2100 November 25,76	DT2	Linear Interpolation
1000 November 29,76	1000 November 29,76	WD1	Linear Interpolation

Note: WS = wind speed WD = wind direction DT = temperature difference 1 = lower level 2 = upper level

TABLE 3.4.1 (Continued)

ON-SITE METEOROLOGICAL DATA BASE SUBSTITUTIONS WHEN
PARAMETER IS MISSING AT BOTH LEVELS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

PERIOD		PARAMETER	SUBSTITUTION
FROM	TO		
0900 December 3,76	0900 December 3,76	DT2	Linear Interpolation
0600 December 5,76	0900 December 5,76	DT2	Linear Interpolation
1200 December 24,76	1300 December 24,76	DT2	Linear Interpolation
1400 January 13,77	1500 January 13,77	DT2	Linear Interpolation
0500 January 22,77	0500 January 22,77	DT2	Linear Interpolation
0200 February 7,77	0600 February 7,77	WD2	Linear Interpolation
1100 February 14,77	1600 February 14,77	DT2	Linear Interpolation
0700 February 16,77	0800 February 16,77	DT2	Linear Interpolation
1200 February 21,77	1400 February 21,77	DT2	Linear Interpolation
0300 March 21,77	0600 March 21,77	DT2	Linear Interpolation
0000 April 21,77	0100 April 21,77	DT2	Linear Interpolation
1200 May 10,77	1400 May 10,77	DT2	Linear Interpolation
0100 May 14,77	0100 May 14,77	WS1,WS2	0100 May 15,77 to 0100 May 15,77
0700 May 14,77	0700 May 14,77	WS1,WS2	0700 May 15,77 to 0700 May 15,77
0800 May 14,77	0800 May 14,77	WD1,WD2	0900 May 14,77 to 0900 May 14,77
2200 May 16,77	2200 May 16,77	DT1,DT2	Linear Interpolation
0600 May 20,77	0600 May 20,77	DT1,DT2	0600 May 23,77 to 0600 May 23,77
1000 May 20,77	1000 May 20,77	DT1,DT2	1000 May 23,77 to 0600 May 23, 77
1100 May 20, 77	1100 May 20,77	WD1,WS2, DT1,DT2	1100 May 23,77 to 1100 May 23,77
1200 May 20,77	1200 May 20,77	WS1,WS2, DT1,DT2	1200 May 23,77 to 1200 May 23,77
1300 May 20,77	1300 May 20,77	All	1300 May 23,77 to 1300 May 23,77
1400 May 20,77	1400 May 20,77	WD1,WD2, DT1,DT2	1400 May 23,77 to 1400 May 23,77
1500 May 20,77	1500 May 20,77	WD1,WD2, DT1,DT2	1500 May 23,77 to 1500 May 23,77
0600 May 30,77	0600 May 30,77	WD1,WD2	0500 May 30,77 to 0500 May 30,77
0900 June 17,77	0900 June 17,77	DT2	Linear Interpolation
0100 June 20,77	0400 June 20,77	DT2	Linear Interpolation
0400 June ,77	0400 June 22,77	WD1,WD2	0500 June 22,77 to 0500 June 22,77
1500 June 2,77	1500 June 22,77	DT2	Linear Interpolation
1000 June 3,77	1000 June 23,77	DT2	Linear Interpolation

Note: WS = wind speed WD = wind direction DT = temperature difference 1 = lower level 2 = upper level

TABLE 3.4.2

SITE SPECIFIC POWER LAW COEFFICIENTS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

STABILITY CLASS	MEAN POWER LAW COEFFICIENT	STANDARD DEVIATION
1	.0254	.144
2	.0483	.149
3	.0603	.166
4	.113	.182
5	.263	.206
6	.345	.263
7	.347	.341

1

TABLE 3.4.3

SITE SPECIFIC WIND SHEARS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

STABILITY CLASS	WIND SHEAR ($\Delta\theta$) (Degrees)
1	3.81
2	5.61
3	6.83
4	9.35
5	13.17
6	24.44
7	21.12

1

TABLE 3.5.1

STABILITY CLASS FREQUENCY (%)
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	Stability Classes						
	A	B	C	D	E	F	G
January, 1977	15.3	5.2	7.0	40.3	18.4	10.0	3.8
February, 1977	10.6	6.4	7.9	32.9	22.8	10.9	8.6
March, 1977	6.5	6.1	14.0	46.5	17.6	7.0	2.2
April, 1977	11.1	6.9	9.9	35.3	26.0	7.2	3.6
May, 1977	9.7	9.7	7.0	38.7	28.0	6.9	0.1
June, 1977	29.3	8.6	3.1	24.1	23.9	6.3	4.2
July, 1976	27.3	5.5	4.7	24.2	2.0	8.3	2.8
August, 1976	31.3	3.2	3.4	15.6	27.2	13.4	5.9
September, 1976	31.3	2.5	2.1	15.0	22.3	17.6	8.8
October, 1976	8.9	4.3	7.2	37.5	17.7	9.5	14.8
November, 1976	9.6	5.4	6.5	31.9	26.3	15.7	4.6
December, 1976	9.7	6.7	7.7	30.8	25.0	14.8	5.3
Annual	16.7	5.9	6.8	31.1	23.6	10.5	5.4

Period of Record - July 1, 1976 to July 30, 1977

Sensor Height - 10.67 to 96.93 meters

1

TABLE 3.5.2

MOST FREQUENT WIND DIRECTION
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	A	B	C	D	E	F	G
January	NNW	NNW	NNW	S	N	W	NW
February	NNW	N	N	N	NW	S	WSW
March	N	NW	N	S	SSE	SW	SW
April	N	SSW	N, SSW, SSE	SSE	SSE	S	NW
May	S	S	S	S	S	S	NNW
June	N	S, SE	S, N	E	S	SSW,SE	W
July	SW	S	SSW	SSW	SSW	SE	N
August	S	S,SE	N	E	SE	SSW	SE
September	NNW	S	SW	NNW	S	S	SSW
October	NNW	NNW	N	SN	S,NNW	S	SSE
November	NNW	NW	N,SSW	NNW	W,NWS	S,SSW	W
December	N	N	NNW	NNW	S	SSW	W
Annual	N	N	N	N	S	S	SW

Period of Record - July 1, 1976 to June 30, 1977

Sensor Height - 96.93 meters

1

TABLE 3.5.3

MEAN WIND SPEED (MPS)
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	Stability Class							
	A	B	C	D	E	F	G	All
January	7.7	8.7	7.4	5.8	5.5	4.8	4.4	6.1
February	7.1	8.2	9.1	6.8	6.5	5.3	4.9	6.7
March	8.4	7.8	7.9	8.4	7.7	7.0	2.3	8.0
April	9.0	8.5	7.1	6.8	6.4	5.2	4.9	6.9
May	8.3	7.2	6.8	6.8	6.5	4.7	3.8	6.7
June	6.2	6.4	6.1	7.1	6.6	5.1	3.7	6.4
July	4.8	4.3	5.1	5.4	5.8	3.9	2.5	5.1
August	5.0	6.6	6.1	5.7	6.3	6.1	4.2	5.7
September	5.0	4.7	4.4	5.2	5.8	4.5	4.3	5.0
October	6.0	4.8	5.3	4.8	5.3	5.4	3.8	4.9
November	6.4	6.5	7.2	6.0	5.4	5.1	5.1	5.8
December	8.3	8.3	7.3	5.7	6.1	6.0	4.7	6.3
Annual	6.3	7.0	7.0	6.3	6.1	5.2	4.2	6.1

Period of Record - July 1, 976 to June 30, 1977.

Sensor Height - 96.93 meters

1

TABLE 3.5.4

MOST FREQUENT WIND DIRECTION
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	A	B	C	D	E	F	G
January, 1977	N,NW	NNW	NNW	NW	WNW	S	S
February, 1977	NNW	NNW	NNW	S	S	S	SSE
March, 1977	NNW	N	WNW	SE	SE	S	SSW
April, 1977	NNW	S,SSW	N	SE	S	S	W
May, 1977	S	SSE	S	SSE	SE	N	NNW
June, 1977	N	SE	N	SE	N	S	W
July, 1976	SW	SSE	SW	SW	S	N	N,SSE
August, 1976	S	SE	N	SE	SE	S	N
September, 1976	NNW	S	SW	NNW	SE	S	SSE
October, 1976	NNW	NNW	N,NNW	N	N,S	S	SSE
November, 1976	NNW	N	N	NNW	WNW	S	SSE
December, 1976	NNW	NNW	NNW	NNW	S	S	SSE

Period of Record - July 1, 1976 to June 30, 1977

Sensor Height - 10.67 meters

TABLE 3.5.5

MEAN WIND SPEED (MPS)
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

	Stability Class							
	A	B	C	D	E	F	G	All
January, 1977	6.5	6.8	5.9	4.5	3.2	2.4	2.2	4.5
February, 1977	6.5	6.7	6.9	5.5	3.9	2.8	1.9	4.8
March, 1977	7.0	6.8	6.6	6.5	4.5	3.1	1.8	.9
April, 1977	7.5	7.3	5.9	4.9	3.4	1.9	1.7	4.7
May, 1977	7.0	6.5	5.9	5.1	3.5	2.1	1.9	4.8
June, 1977	5.3	5.1	4.6	4.4	3.3	2.3	1.9	4.2
July, 1976	4.6	4.0	4.7	4.0	3.2	1.8	1.7	3.7
August, 1976	4.6	5.1	4.4	3.8	3.1	2.3	1.9	3.6
September, 1976	4.9	4.5	4.6	3.9	3.4	2.5	1.9	3.7
October, 1976	5.5	4.7	4.7	4.0	3.2	2.4	1.7	4.6
November, 1976	6.2	6.3	6.9	5.2	3.7	2.4	2.7	4.6
December, 1976	7.3	6.7	6.3	4.7	3.8	3.3	2.0	4.7
Annual	5.6	6.0	5.9	4.9	3.5	3.5	1.9	4.4

Period of Record - July 1, 1976 to June 30, 1977

Sensor Height - 10.67 meters

1

CHAPTER 2

AQUATIC TRANSPORT AND DISPERSION OF LIQUID EFFLUENT PER REGULATOR GUIDE 1.113

FOR THE

COOPER NUCLEAR STATION

NEBRASKA PUBLIC POWER DISTRICT
COLUMBUS, NEBRASKA

Revision 1
1/78

AQUATIC TRANSPORT AND DISPERSION OF LIQUID EFFLUENT
PER REGULATORY GUIDE 1.113
COOPER NUCLEAR GENERATING STATION

NEBRASKA PUBLIC POWER DISTRICT

Revised November 3, 1976

Introduction

An investigation was performed to determine the concentrations of waterborne radionuclides in the Missouri River downstream of the Cooper Nuclear Station. The analysis utilized a steady-state stream tube model to compute the far-field concentrations in a two-dimensional vertically-mixed flow system. The closed-form solution to this mode is:

Equation (7) in Regulatory Guide 1.113

$$\chi = \frac{W}{Q}\left[1 + 2\sum_{n=1}^{\infty} \exp\left(\frac{-n^2\pi^2 D_x}{Q^2}\right)\cos\left(\frac{n\pi q_s}{Q}\right) \cdot \cos\left(\frac{n\pi q}{Q}\right)\right] \quad (7)^*$$

for a rectangular channel Equation 7 transforms to:

$$\chi = \frac{W}{Q}\left[1 + 2\sum_{n=1}^{\infty} \exp\left(\frac{-n^2\pi^2 K_y X}{UB^2}\right)\cos\left(\frac{n\pi Y_s}{B}\right) \cdot \cos\left(\frac{n\pi y}{B}\right)\right] \quad (7A)^*$$

---

* "ɔ" is a constant diffusion factor.
"q" is the cumulative discharge.
Please refer to attached Appendix for definition of remaining terms.

Using the following transformations from Regulatory Guide 1.113

$$\begin{Bmatrix} D/Q^2 \\ q \\ Q \end{Bmatrix} \longrightarrow \begin{Bmatrix} K_y/UB^2 \\ y \\ B \end{Bmatrix}$$

The $\frac{W}{Q}$ factor outside the brackets is not affected by the transformation.

The Equation (7A)* was used to compute the steady-state concentrations for a conservative substance downstream from its source for any point in a river cross-section. After having determined this concentration for a conservative substance, Equation (4)* may be used to account for the radioactive decay in transit, but for this study decay was not considered.

Application of Model to Site Conditions

In order to apply the above theoretical stream tube model to the actual site conditions, the Missouri River hydraulic characteristics were estimated over a range of flow conditions. The lowest flow considered was 8,000 cfs, which corresponds to the 7-day-average once-in-10 year low flow during the winter months (U.S. Atomic Energy Commission, 1973). Flows less than this value were not considered, since they would have

---

* Please refer to Appendix to Chapter 2.

a lower frequency of occurrance and/or a shorter duration and were not considered appropriate for use in the aquatic dose calculations. The largest flow considered was 30,900 cfs, which corresponds to the 7-day-average once-in-10 year low flow during the summer months (U.S. Atomic Energy Commission, 1973). This flow is nearly equal to the annual mean flow of 32,000 cfs, hence making it the more suitable value for use in aquatic dose calculations on an annual basis.

The Missouri River channel properties were estimated over the above range of flows using certain known parameters to reconstitute observed flow characteristics. In the general site vicinity, the Missouri River has a typical bed slope of about 0.02 percent and a Manning roughness coefficient of approximately 0.026. Using these parameters and effective river width of 800 feet at a flow of 30,900 cfs, a depth of 10.2 feet was computed using the Manning equation for a wide rectangular channel. This computed depth is in close agreement with the depth of 10 to 12 feet in the site vicinity where the river is fairly uniform, which was observed at a flow of 35,000 cfs (U.S. Atomic Energy Commission, 1973). At the lowest flow considered of 8,000 cfs, the river stage at the site is 4.9 feet lower than its stage at 30,900 cfs (U.S. Atomic Energy Commission, 1973). Therefore, using an average depth of 10.2 - 4.9 = 5.3 feet at this lower discharge and the previous bed slope and roughness parameters, a river width of

613 feet was computed for the idealized wide rectangular cross-section. The resulting average flow velocity under these conditions, 2.46 ft/sec, is consistent with observed velocities of about 2.5 ft/sec near a flow of 11,000 cfs (U.S. Atomic Energy Commission, 1973).

After having determined the average Missouri River channel properties over the range of flow conditions, the only parameter which remained to be defined was the transverse diffusion coefficient. This coefficient was needed to determine the lateral mixing characteristics in the steady-state stream tube model, and may be estimated for straight natural stream channels by means of Equation (11)*. For natural curved channels, such as the Missouri River, secondary flows can lead to increased lateral mixing and a larger "beta" coefficient. On the basis of a field investigation of lateral mixing characteristics for the Missouri River downstream of the Cooper Nuclear Station, a transverse diffusion coefficient of 11.94 ft^2/sec was determined at a flow of 35,000 cfs (Sayre and Yeh, 1973). When substituted into Equation (11), the resulting beta coefficient is 3.17, or 13.8 times greater than the value of 0.23 suggested for straight natural stream channels. The transverse diffusion coefficients were computed over the range of flows being considered, using Equations (11) with beta equal to 3.17 and other parameters from the previously derived channel properties.

1. Pilgrim Station Unit 1, Appendix I Evaluation, April 1977.
#770980073

2. Appendix I Evaluation Report, October 1, 1976
Calvert Cliffs Nuclear Power Plant

3. Demonstration of compliance with 10CFR50, Appendix I Supplement
Cooper Nuclear Station, June 27, 1977.

4. Demonstration of Compliance with 10CFR50, Appendix I,
Revision 1 and Supplement 2, January 9, 1978
Cooper Nuclear Station
#7806500027

Results of Model Application

Using the physical and hydraulic characteristics described above, the stream tube model was used to calculate the steady-state concentrations in the surface water exposure pathway resulting from an assumed accidental or routine radioactive release into the Missouri River at the Cooper Nuclear Station. A single point source of radioactivity located on the river bank was selected, corresponding to the discharge point of the plant condenser cooling water system. For computational purposes, a constant source strength of 1.0×10^{-2} μ Ci/sec was adopted. This value is approximately equal to 0.3 Ci/year.

Since the solution of Equation (7A) contains an unbounded summation term, a computer program was used to evaluate the solution. The summation term was evaluated by convergence until the difference between successive iterations was less than 0.1 percent. In this manner, the steady-state concentrations were computed for a distance of 50 stream miles at one-half mile intervals along the Missouri River, for both banks of the river. At relatively short distances below the site, large differences in concentrations across the river were obtained, with the higher concentrations located on the same side of the river as was the source. This lateral concentration gradient becomes less pronounced for locations

further downstream of the site, due to the effects of transverse diffusion. At a distance of 50 river miles below the Cooper Nuclear Station, the steady-state stream tube model predicted virtually fully-mixed conditions across the Missouri River. The computed concentrations at lateral and down river distances are given in Table 1, and Table 2 provides the input data used in the 3 cases considered.

This report has treated only the far field (greater than 1/2 mile) aquatic dispersion concentrations which assumes a continuous point source emission into the river at the center of the discharge channel to be consistent with Regulatory Guide 1.113. The near field (1 mile or less) concentrations which considers the mixing and dispersion in the channel before entering the river as well as the mixing in the river itself will be treated in the calculations of annual doses per Regulatory Guide 1.109.

REFERENCES CITED

1. Sayre, William W. and Yeh, Tso-Ping, 1973, "Transverse Mixing Characteristics of the Missouri River Downstream from the Cooper Nuclear Station," Report No. 145, Iowa Institute of Hydraulic Research.

2. U.S. Atomic Energy Commission, 1973, "Final Environmental Statement Related to the Operation of Cooper Nuclear Station," Docket No. 50-298, Nebraska Public Power District.

3. U.S. Nuclear Regulatory Commission, 1976, "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," Regulatory Guide 1.113, published for comment.

TABLE 1

CONCENTRATIONS
CONTINUOUS RELEASE AQUATIC DISPERSION MODEL
COOPER NUCLEAR STATION

Distance Down River (miles)	Average Discharge 30,900 CFS			Average Discharge 11,000 CFS			Average Discharge 8,000 CFS		
	Travel Time (sec)	Near Bank Conc.	Far Bank Conc.	Travel Time (sec)	Near Bank Conc.	Far Bank Conc.	Travel Time (sec)	Near Bank Conc.	Far Bank Conc.
0.5	697	19.31	<0.01	975	56.13	<0.01	1072	75.25	<0.01
1.0	1394	13.67	<0.01	1950	39.66	<0.01	2144	53.18	<0.01
2.5	3486	8.65	0.05	4875	25.07	0.12	5361	33.64	0.23
5	6972	6.11	0.75	9750	17.74	1.76	10721	23.75	2.76
10	13943	4.35	2.12	19500	12.59	5.63	21443	16.93	8.12
15	20915	3.70	2.77	29251	10.60	7.57	32164	14.33	10.65
20	27887	3.42	3.06	39001	9.75	8.42	42886	13.26	11.72
25	34858	3.31	3.16	48751	9.38	8.78	53607	12.80	12.18
30	41830	3.26	3.21	58501	9.20	8.96	64328	12.64	12.34
35	48802	3.26	3.21	68252	9.14	9.02	75050	12.57	12.41
40	55773	3.24	3.24	78002	9.14	9.08	85771	12.49	12.49
45	62745	3.24	3.24	87756	9.08	9.08	96492	12.49	12.49
50	69717	3.24	3.24	97502	9.08	9.08	107214	12.49	12.49

Concentration Units: Curies x $10^{-13}/ft^3$

TABLE 2

INPUT DATA FOR CONTINUOUS RELEASE

AQUATIC DISPERSION MODEL

COOPER NUCLEAR STATION

	CASE I	CASE II	CASE III
Average width of river (ft)	800.0	666.0	613.0
Average depth of river (ft)	10.2	6.1	5.3
Average discharge of river (cfs)	30900.	11000.	8000.
Average slope of river bed (ft/ft)	.0002	.0002	.0002
Influent activity input rate (μCI/sec)	0.01	0.01	0.01

APPENDIX TO CHAPTER 2

The following equations and definitions of variables which appear in Appendix A, Section 2 of Regulatory Guide 1.113 (U.S. Nuclear Regulatory Commission, 1976) have been referenced in portions of the preceeding report.

Equation (7) (after transformation for rectangular channel)

$$\chi = \frac{W}{Q}\left[1 + 2\sum_{n=1}^{\infty} \exp\left(\frac{-n^2\pi^2 K_y X}{UB^2}\right)\cos\left(\frac{n\pi Y_s}{B}\right) \cdot \cos\left(\frac{n\pi y}{B}\right)\right]$$

where:

χ = nondecaying concentration

W = source strength

B = width of river

K_y = lateral turbulent diffusion coefficient

X = distance downstream of source at which concentration is to be computed

U = flow velocity of river

Y_s = distance across river at which source is located

y = distance across river at which concentration is to be computed

Q = volume flow rate of river

Equation (4)

$$C = \chi \exp(-\lambda x/U)$$

where:

C = concentration for nonconservative substance

λ = decay coefficient $\equiv$ (ln2)/(half life)

χ, X, U = previously defined in Equation (7)

Equation (11)

$$K_y = \beta U^* d$$

where:

β = dimensionless constant

U^* = shear velocity

d = depth of river

K_y = previously defined in Equation (7)

CHAPTER 3

CALCULATIONS OF RELEASES OF RADIOACTIVE MATERIAL IN LIQUID AND GASEOUS EFFLUENTS

COOPER NUCLEAR STATION

NEBRASKA PUBLIC POWER DISTRICT

Revision 1

1/78

1.0 INTRODUCTION

On April 30, 1975 the Nuclear Regulatory Commission issued its Final Opinion in the matter of the Rule Making Hearings (RM-50-2) on "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low As Practicable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents." This opinion provides in part that: 1

"The Applicant shall provide reasonable assurance that the following design objectives will be met.

II A. 'The calculated annual total quantity of all radioactive material above background[1] to be released from each light-water-cooled nuclear power reactor to unrestricted areas will not result in an estimated annual dose or dose commitment from liquid effluents for any individual in an unrestricted area from all pathways of exposure in excess of 3 millirems to the total body or 10 millirems to any organ. 1

---

[1]Here and elsewhere in the report, background means radioactive materials in the environment and in the effluents from light-water-cooled power reactors not generated in, or attributable to, the reactors of which specific account is required in determining design objectives.

B.1. 'The calculated annual total quantity of all radioactive material above background to be released from each light-water-cooled nuclear power reactor to the atmosphere will not result in an estimated annual air dose from gaseous effluents at any location near ground level which could be occupied by individuals in unrestricted areas in excess of 10 millirads for gamma radiation or 20 millirads for beta radiation. 1

2. 'Notwithstanding the guidance of paragraph B.1: 1

(a) The Commission may specify, as guidance on design objectives, a lower quantity of radioactive material above background to be released to the atmosphere if it appears that the use of the design objectives in paragraph B.1 is likely to result in an estimated annual external dose from gaseous effluents to any individual in an unrestricted area in excess of 5 millirems to the total body; and

(b) 'Design objectives based upon a higher quantity of radioactive material above background to be released to the atmosphere than the quantity specified in paragraph B.1 will be deemed to meet the requirements for keeping levels of radioactive material in gaseous effluents as low as practicable if the applicant provides reasonable assurance that the proposed higher quanity will not result in an estimated annual external dose from gaseous effluents to any individual in unrestricted areas in excess of 5 millirems to the total body or 15 millirems to the skin. | 1

C. 'The calculated annual total quantity of all radioactive iodine and radioactive material in particulate form above background to be released from each light-water-cooled nuclear power reactor in effluents to the atmosphere will not result in an estimated annual dose or dose commitment from such radioactive iodine and radioactive material in particulate form for any individual in an unrestricted area from all pathways of exposure in excess of 15 millirems to any organ. | 1

D. 'In addition to the provisions of paragraphs A, B, and C above, the applicant shall include in the radwaste system all items of reasonably demonstrated technology that, when added to the system sequentially and in order of diminishing cost-benefit return, can for a favorable cost-benefit ratio effect reductions in dose to the population reasonably expected to be within 50 miles of the reactor. As an interim measure and until establishment and adoption of better values (or other appropriate criteria), the values $1000 per total body man-rem and $1000 per man-thyroid-rem (or such lesser values as may be demonstrated to be suitable in a particular case) shall be used in this cost-benefit analysis.' " 1

Sections 2.0 and 3.0 provide the methodology and results of deriving the liquid and gaseous release rates from the Cooper Station.

In carrying out the calculations described herein use has been made, to the greatest extent possible, of the Regulatory Guides which the NRC Staff has issued to provide guidance in the implementation of Appendix I. Except where specifically noted the equations, methods, and suggested parameters of these guides have been used throughout. Specifically the Regulatory Guides which were used in the development of these sections are:

1.109 Calculation of Annual Average Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Implementing Appendix I Issue Date: March, 1976

1.112 Calculation of Releases of Radioactive Materials in Liquid and Gaseous Effluents from BWR Issue Date: April, 1976

1.110 Cost-Benefit Analysis for Radwaste Systems for Light-Water-Cooled Nuclear Power Reactors Issue Date: March, 1976

1.111 Methods of Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light Water Reactors Issue Date: July 1977 (Revision 1). 1

In this report only RG 1.112 was used in deriving the source terms.

2.0 LIQUID RADWASTE SYSTEMS

2.1 Introduction

The requirements of Appendix I to 10 CFR Part 50 were outlined in Section 1.0; likewise Regulatory Guides which were used to make the necessary calculations were described. This section describes the equipment and development of the source term for the liquid systems as requirements of 10 CFR 50 Appendix I. The Base Case that follows pertains to the case using the presently operated equipment at Cooper Station. Alternate cases that would be used in a cost-benefit analysis pertain to cases of adding or deleting equipment to demonstrate the benefit of a dose reduction at a designated cost.

2.2 Description of Base Case Equipment

The waste systems which have been used at the Cooper Station have been described in some detail in the Safety Analysis Report and in the Final Environmental Statement. For an orderly presentation of this discussion, however, a brief and simplified description of the waste treatment systems which have been used for handling the liquid wastes from Cooper Station is included herein.

Liquid wastes from any BWR come from a variety of sources which have a considerable disparity in chemical and radio-chemical composition and concentration. Normally these wastes are collected and treated separately. The liquid wastes fall into the following categories:

1) High Purity
2) Low Purity
3) Chemical
4) Detergent

High-purity wastes generally have low solids content, low conductivity, and variable radioactivity. They come from equipment drain sumps and from the backwash and resin transfer water used to change out the condensate demineralizers. Liquid wastes collected in the turbine building equipment drains may sometimes be included with the high-purity waste stream; more frequently they are returned directly to the main condenser hotwell. Reuse of processed high-purity waste is highly desirable.

Low-purity wastes have moderate conductivity and solids content. They come from building floor sumps and are generally high-purity wastes which have become contaminated by dirt, grease, etc. When processed this stream may or may not be reused depending on the water balance in the plant and the quality of the product.

The chemical wastes, which come from condensate demineralizer regeneration and laboratory drains, contain higher solids and relatively higher radioactivity, and should be segregated from the other waste streams, although they have sometimes been combined with the low-purity wastes for treatment. If treated separately it is likely that the product would be discarded rather than reused.

Detergent wastes come from the laundry (if provided) and from personnel and equipment decontamination. They are very low in radioactivity content and the detergent content makes their processing difficult.

The liquid radwaste system installed at the Cooper Station is shown in a very simplified schematic way in Figure 2-1. The High Purity waste is collected in a 22,000-gal Collection Tank. This waste receives one stage of mixed bed ion exchange and it is reused to the greatest extent possible, normally more than 99%.

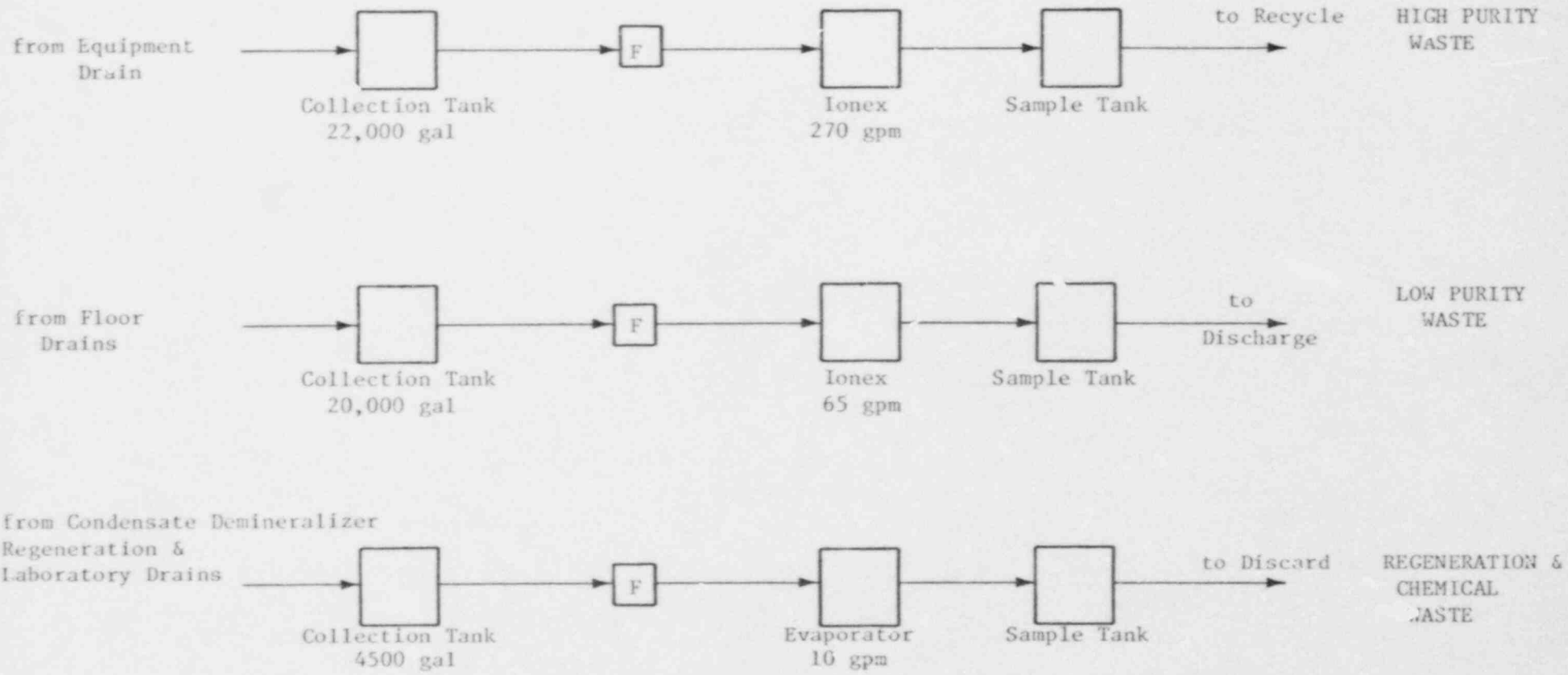
The Low Purity waste is collected in a 20,000-gal Collection Tank. This waste is also treated by one stage of ion exchange. It is normally discarded.

The chemical waste is collected in a 4500-gal tank and is evaporated in a 10-gpm evaporator. The evaporator overhead can be additionally treated by ion exchange if desired. The overhead is totally discarded. | 1

The laundry wastes are discarded after filtration.

Figure 2-1

Liquid Waste Treatment Schematic-Base Case
Cooper Nuclear Station
Nebraska Public Power District



Note: Laundry wastes are discarded after filtration.

2.3 Source Terms

The liquid emission source terms for the Base Case were calculated using the BWR-GALE code and the parameters outlined in Reg Guide 1.112. The detailed inputs for each of these cases and the resulting source term outputs are described in this section.

2.3.1 Basic Inputs to GALE Code

There are certain fundamental input terms which describe the subject reactor, which are common to all cases, and which are specific to the particular reactor. These common input terms for Cooper Station are given in Table 2-1.

2.3.2 Base Case Input Terms and Resulting Releases

The input terms required to describe the Base Case liquid radwaste treatments (outlined in Section 2.2) are shown in Table 2-2. The resulting liquid releases by isotope are shown in Table 2-3.

TABLE 2-1

GALE INPUT TERMS COMMON TO ALL CASES

CARD NUMBER	ITEM	SPACES	ENTRY	COMMENT
1	REACTOR NAME	33-60	COOPER NUCLEAR STATION	
	REACTOR TYPE	78-80	BWR	
2	MAXIMUM THERMAL POWER (MWT)	73-80	2486.	
3	TOTAL STEAM FLOW (MILLIONS OF POUNDS PER HOUR)	73-80	10.24	
4	MASS OF WATER IN REACTOR VESSEL (MILLIONS OF POUNDS)	73-80	0.43	
5	CLEAN-UP DEMINERALIZER FLOW (MILLIONS OF POUNDS PER HOUR)	73-80	0.1	
6	CONDENSATE DEMINERALIZER REGENERATION FREQUENCY (DAYS)	73-80	21.	
7	FRACTION OF FEED WATER THROUGH CONDENSATE DEMINERALIZER	73-80	1.	
8	RADWASTE DILUTION FLOW (THOUSANDS OF GALLONS/MINUTE)	73-80	567.62	

TABLE 2-2

GALE INPUT TERMS FOR BASE CASE -- LIQUIDS

CARD NUMBER	ITEM	SPACES	ENTRY	COMMENT
9	WASTE STREAM	17-33	HIGH PURITY WASTE	
	VOLUME (GALLONS PER DAY)	42-49	1.614E+04	
	FRACTION OF PRIMARY COOLANT ACTIVITY	57-61	0.22	
10	DF FOR IODINE	21-28	100.	
	DF FOR CESIUM, RUBIDIUM	34-41	10.	
	DF FOR OTHER ISOTOPES	47-54	100.	
11	COLLECTION TIME (DAYS)	28-33	0.55	
	PROCESSING TIME (DAYS)	48-53	2.000E-02	
	FRACTION DISCHARGED	72-77	1.000E-02	
12	WASTE STREAM	17-33	LOW PURITY WASTE	
	VOLUME (GALLONS PER DAY)	42-49	5700.	
	FRACTION OF PRIMARY COOLANT ACTIVITY	57-61	0.13	
13	DF FOR IODINE	21-28	100.	
	DF FOR CESIUM, RUBIDIUM	34-41	2.	
	DF FOR OTHER ISOTOPES	47-54	100.	
14	COLLECTION TIME (DAYS)	28-33	1.4	
	PROCESSING TIME (DAYS)	48-53	9.000E-02	
	FRACTION DISCHARGED	72-77	1.	
15	WASTE STREAM	17-33	CHEMICAL WASTE	
	VOLUME (GALLONS PER DAY)	42-49	600.	
	FRACTION OF PRIMARY COOLANT ACTIVITY	57-61	2.000E-02	
16	DF FOR IODINE	21-28	1000.	
	DF FOR CESIUM, RUBIDIUM	34-41	1.000E+04	
	DF FOR OTHER ISOTOPES	47-54	1.000E+04	
17	COLLECTION TIME (DAYS)	28-33	0.45	
	PROCESSING TIME (DAYS)	48-53	0.13	
	FRACTION DISCHARGED	72-77	1.	
18	CONDENSATE REGENERANT WASTE VOLUME (GALLONS PER DAY)	73-80	3400.	
19	DF FOR IODINE	21-28	1000.	
	DF FOR CESIUM, RUBIDIUM	34-41	1.000E+04	
	DF FOR OTHER ISOTOPES	47-54	1.000E+04	
20	COLLECTION TIME (DAYS)	28-33	0.45	
	PROCESSING TIME (DAYS)	48-53	0.13	
	FRACTION DISCHARGED	72-77	1.	

TABLE 2-2

GALE INPUT TERMS FOR BASE CASE -- LIQUIDS

CARD NUMBER	ITEM	SPACES	ENTRY	COMMENT
36	DETERGENT WASTE DECONTAMINATION FACTOR	73-80	1.	

TABLE 3-3

LIQUID RELEASES -- BASE CASE
(CURIES/YEAR)

ISOTOPE	RELEASE	ISOTOPE	RELEASE
H----3	3.10E+01	RU-103	4.40E-04
NA--24	4.40E-02	RU-105	2.70E-03
P---32	2.70E-03	RU-106	2.40E-03
CR--51	7.20E-02	RH103M	3.00E-04
MN--54	1.90E-03	RH105M	2.80E-03
MN--56	3.10E-02	RH-105	1.60E-03
FE--55	1.60E-02	RH-106	4.70E-05
FE--59	4.50E-04	AG110M	4.60E-04
CO--58	7.10E-03	TE129M	5.90E-04
CO--60	1.50E-02	TE-129	3.80E-04
NI--63	1.60E-05	TE131M	7.30E-04
NI--65	1.80E-04	TE-131	1.30E-04
CU--64	1.30E-01	TE-132	1.00E-04
ZN--65	3.10E-03	I--131	2.50E+00
ZN-69M	9.20E-03	I--132	2.10E-02
ZN--69	9.70E-03	I--133	9.60E-01
BR--83	2.30E-03	I--134	6.10E-03
BR--84	1.20E-04	I--135	1.30E-01
RB--89	1.90E-04	CS-134	2.90E-02
SR--89	1.50E-03	CS-136	9.90E-03
SR--90	9.50E-05	CS-137	6.00E-02
SR--91	1.40E-02	CS-138	6.10E-03
SR--92	6.70E-03	BA137M	3.40E-02
Y---90	3.80E-05	BA-139	2.00E-03
Y--91M	8.50E-03	BA-140	5.30E-03
Y---91	9.00E-04	BA-141	4.30E-05
Y---92	1.60E-02	LA-140	2.30E-03
Y---93	1.40E-02	LA-141	7.80E-04
ZR--95	1.10E-04	LA-142	1.40E-03
ZR--97	2.70E-05	CE-141	4.80E-04
NB--95	1.10E-04	CE-143	2.30E-04
NB-97M	2.60E-05	CE-144	5.20E-03
NB--97	2.80E-05	PR-143	5.50E-04
NB--98	2.80E-04	PR-144	4.70E-05
MO--99	1.90E-02	ND-147	3.90E-05
TC-99M	5.40E-02	W--187	2.00E-03
TC-101	2.00E-04	NP-239	6.40E-02
TC-104	3.50E-04	OTHERS	9.54E-06

3.0 Gaseous Radwaste Systems

3.1 Introduction

The requirements of Appendix I to 10 CFR Part 50 were outlined in Section 1.0; likewise the Regulatory Guides which were used to make the necessary calculations were described. These comments, which were directed toward the liquid radwaste systems, apply equally to the gaseous systems.

3.2 Description of Base Case Equipment

The waste systems used at Cooper Station have been described in some detail in the Safety Analysis Report and in the Final Environmental Statement. For an orderly presentation of this discussion, however, a brief and simplified description of the base case waste treatment systems used for handling the gaseous wastes from the Cooper Station is included herein.

The major gaseous waste stream from BWR as they were originally designed, as Cooper Station was, in the exhaust from the stream jet air ejector which removes non-condensibles from the condenser. It was this stream, which discharged up to 0.1 curie/sec of noble gas activity, which led to the pressure to reduce emissions from light water reactors and resulted in the promulgation by the then AEC of proposed changes to 10 CFR Part 50 (Appendix I) the effect of which is to limit total body doses from LWR to individuals in unrestricted areas to about 5 mrem/year. All BWR today are being designed to provide considerably further treatment for this air ejector off-gas.

At Cooper Station the air ejector off gas is now put through a catalytic recombiner (to convert the contained hydrogen to water), condenser, drier, cooler, and then through massive beds of charcoal which serve to hold up the noble gases, krypton and xenon, for periods of from hours to days allowing all of the shorter lived noble gases to decay prior to release to the atmosphere. This also effectively removes the iodine isotopes from this stream.

In addition to releases of radioactivity from the condenser off gas all BWR can be expected to experience small releases from the following sources:

1) with the discharge from the turbine gland seal system,

2) from leaks of steam or water into the reactor building ventilation system,

3) from leaks of liquid and particularly of steam into the turbine building ventilation system,

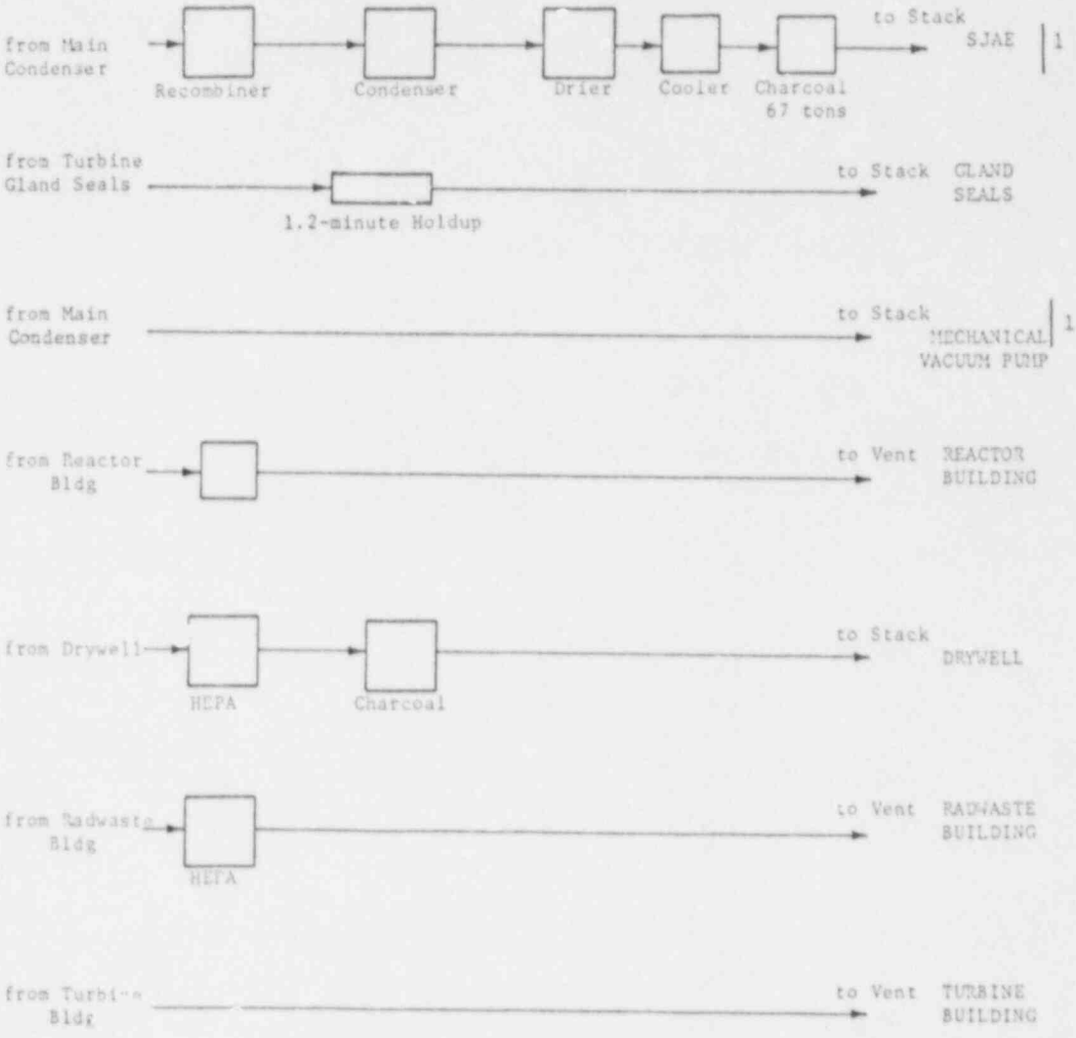
4) from leakage into the radwaste building ventilation system, and

5) with the discharge of the mechanical vacuum pump system which is used for the removal of non-condensibles from the main condenser during startups before steam is available with which to operate the steam jet air ejector.

The systems used for handling gaseous waste at Cooper Station are shown schematically in Figure 3-1. This system is the Base Case.

Figure 3-1

Gaseous Waste Schematic-Base Case
Cooper Nuclear Station
Nebraska Public Power Station



3.3 Source Terms

The gaseous emission source terms for the Base Case were calculated using the BWR-GALE code and the parameters outlined in Reg Guide 1.112. The detailed inputs for each of these cases and the resulting source term outputs are described in this section.

3.3.1 Basic Inputs to GALE Code

There are certain fundamental input terms which describe the subject reactor and which are common to all cases and which are specific to the particular reactor. These common input terms for Cooper Station were given in Table 2.1 for liquid releases and are also used for gaseous releases.

3.3.2 Base Case Input Terms and Resulting Releases

The input terms required to describe the Base Case gaseous radwaste treatments (outlined in paragraph 3.2) are shown in Table 3-1. The resulting gaseous releases by isotope for the Base Case are shown in Table 3-2. Note that there are two types of gaseous release points and that it is necessary to specify the release terms for each.

COOPER 12/20/76

TABLE 3-1

GALE INPUT TERMS FOR BASE CASE -- GASES

CARD NUMBER	ITEM	SPACES	ENTRY	COMMENT
21	GLAND SEAL STEAM FLOW (THOUSANDS OF POUNDS PER HR)	73-80	10.24	
22	MASS OF STEAM IN REACTOR VESSEL (MILLIONS OF POUNDS)	73-80	2.540E-03	
23	GLAND SEAL HOLDUP TIME (HOURS)	73-80	2.000E-02	
24	AIR EJECTOR OFFGAS HOLDUP TIME (HOURS)	73-80	0.5	
25	CONTAINMENT BUILDING			
	CHARCOAL	43-45	YES	
	HEPA	52-54	YES	
26	TURBINE BUILDING			
	CHARCOAL	43-45		NO CHARCOAL
	HEPA	52-54		NO HEPA
	SPECIAL FEATURES	68-70		NO SPECIAL FEATURES
27	GLAND SEAL VENT IODINE PF	73-80	1.	
28	AIR EJECTOR OFFGAS IODINE PF	73-80	0.	
29	AUXILIARY BUILDING			
	CHARCOAL	43-45		NO CHARCOAL
	HEPA	52-54	YES	
30	RADWASTE BUILDING			
	CHARCOAL	43-45		NO CHARCOAL
	HEPA	52-54	YES	
31	DELAY SYSTEM	80	1	
32	KRYPTON DYNAMIC ADSORPTION COEFFICIENT	73-80	105.	
33	XENON DYNAMIC ADSORPTION COEFFICIENT	73-80	2410.	
34	NUMBER OF MAIN CONDENSER SHELLS	73-80	2.	
35	MASS OF CHARCOAL IN DELAY SYSTEM (THOUSANDS OF POUNDS)	73-80	66.6	

TABLE 3-1

GALE INPUT TERMS FOR BASE CASE -- GASES

CARD NUMBER	ITEM	SPACES	ENTRY	COMMENT
37	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE CONTAINMENT BUILDING	20-24	0.	
	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE TURBINE BUILDING	28-32	0.5	
	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE AUXILIARY BUILDING	36-40	0.	
	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE RADWASTE BUILDING	44-48	0.	
	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE GLAND SEAL	52-56	0.	
	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE AIR EJECTOR	60-64	0.5	
	FRACTION OF GASEOUS TRITIUM RELEASED THROUGH THE MECHANICAL VACUUM PUMP	68-72	0.	

TABLE 3-2

GASEOUS RELEASES -- BASE CASE
(CURIES/YEAR)

ISOTOPE	RELEASE FROM STACK	RELEASE FROM PLANT VENT	TOTAL
H----3	1.55E+01	1.55E+01	3.10E+01
C---14	9.50E+00	0.	9.50E+00
AR--41	2.50E+01	0.	2.50E+01
CR--51	3.00E-06	1.31E-02	1.31E-02
MN--54	3.00E-05	9.30E-04	9.60E-04
FE--59	4.00E-06	6.54E-04	6.58E-04
CO--58	6.00E-06	6.51E-04	6.57E-04
CO--60	1.00E-04	3.00E-03	3.10E-03
ZN--65	2.00E-05	2.35E-04	2.55E-04
KR-83M	3.60E+01	0.	3.60E+01
KR-85M	6.50E+01	7.10E+01	1.36E+02
KR--85	2.00E+02	0.	2.00E+02
KR--87	2.13E+02	1.33E+02	3.46E+02
KR--88	2.13E+02	2.33E+02	4.46E+02
KR--89	1.00E+03	0.	1.00E+03
SR--89	9.00E-07	6.01E-03	6.01E-03
SR--90	5.00E-08	2.31E-05	2.31E-05
ZR--95	4.00E-06	1.05E-04	1.09E-04
SB-124	2.00E-06	3.03E-04	3.05E-04
XE133M	3.00E+00	0.	3.00E+00
XE-133	1.51E+02	2.63E+03	2.78E+03
XE135M	7.20E+01	6.96E+02	7.68E+02
XE-135	2.64E+02	1.06E+03	1.32E+03
XE-137	1.20E+03	0.	1.20E+03
XE-138	8.77E+02	1.41E+03	2.28E+03
I--131	5.10E-02	4.40E-01	4.91E-01
I--133	1.98E-01	1.62E+00	1.82E+00
CS-134	4.00E-05	3.88E-04	4.28E-04
CS-136	3.00E-06	5.95E-05	6.25E-05
CS-137	5.50E-05	7.55E-04	8.10E-04
BA-140	4.00E-06	1.10E-02	1.13E-02
CE-141	1.00E-06	6.27E-04	6.28E-04

CHAPTER 4

CALCULATION OF ANNUAL AVERAGE RADIOLOGICAL DOSES

COOPER NUCLEAR STATION

NEBRASKA PUBLIC POWER DISTRICT

Revision 1
1/78

1.0 INTRODUCTION

The radioactive waste systems of the Cooper Nuclear Station (CNS) are designed to reduce radiation levels in liquid and gaseous effluents to as low as practicably achievable limits. Man is the most radiosensitive living organism and is the most important element in the consideration of radiological impact. It is recognized that biota other than man may receive an exposure from released radionuclides, though slight and insignificant.

Exposures resulting from gaseous releases will reach the other biota through pathways similar to those affecting man. The liquid radwaste system radioactive releases will only incrementally increase the total exposure to these organisms. All biota, including man, are constantly subjected to naturally occurring background radiation, and releases from the CNS will only approach a small fraction of this naturally occurring radiation exposure.

The analysis reported here was based on Regulatory Guide 1.109.

2.0 EXPOSURE PATHWAYS

Radiation exposure from the CNS may result from a) "submersion" in the gaseous effluent; b) "gamma shine" from stack emitted gaseous radionuclides; c) direct radiation; and d) food consumption. The extent of radiation exposure is a function of distance and direction from the facility, the length of time spent near the facility (occupancy factor), and other factors such as eating habits, recreational pursuits, and shielding.

2.1 Pathways for Exposure of Biota Other Than Man

The Missouri River in the vicinity of the plant offers little food for dabbling ducks. Small fish and invertebrates provide a plentiful source of food in the water but few diving ducks utilize these resources. The lack of backwater areas or quiet open water areas within the river for testing and feeding is the main factor limiting waterfowl use of this portion of the channelized river. Waterfowl are more likely to forage for waste grain, which is plentiful in nearby cultivated fields. Duck and goose production in the vicinity of the site is restricted by the lack of breeding habitat. Other than the wood duck, which frequents natural woodlands along the river, few summer resident waterfowl species utilize the river or adjacent habitats for breeding.

Because quiet, shallow water areas are uncommon in this stretch of the Missouri River and marsh and wetland areas are lacking, use of the river by bitterns and rails (shorebirds) is uncommon. However, great blue herons are common feeders on invertebrates. It is not certain, therefore, the degree to which waterfowl will consume fish or invertebrates from the Missouri River since they are not common winter residents of the environs of the facility.

A small number of freshwater invertebrates has been monitored in the Missouri River, but the uptake of these invertebrates by fish or waterfowl will not be considered as an aquatic pathway for radioactive releases.

Internal exposure to most of the important aquatic species in Squaw Creek Reservoir such as the local game fish (Sauger, bluegill, white bass, channel catfish, white crappie, and freshwater drum) is expected through their consumption of the very abundant forage fish, the silvery minnow, and rough fish such as the river carpsucker, and the gizzard shad. Potential external exposure to aquatic biota will derive from immersion in the waters of the Missouri River, exposure to radioisotopes deposited in sediments at the bottom of this aquifer, and shoreline exposure to radionuclides deposited at the water's edge. 1

A stand of ash, elm, cottonwood and scattered cedar trees is located on the bluffs bordering the west side of the station property and offers an ideal habitat for rabbits,

ringneck pheasants and limited numbers of white-tail deer. A favorable habitat for beaver, muskrat, raccoon, long-tail weasel as well as cottontail rabbit, eastern fox squirrel, eastern gray squirrel, opossum, mice, voles and shrews exists along the edge of the river. However, the river does not serve as a primary source of food or cover for any of these species. Beavers and muskrats would be the mose dependent upon the river habitat for their reproductive processes.

Internal exposure to terrestrial animals considered by man to be important, those useful for sport or recreation (white-tailed deer, eastern fox squirrel, cottontail rabbit, eastern gray squirrel), will primarily occur through ingestion of water affected by plant liquid effluents, submersion in the gaseous effluent, exposure to "gamma shine" from gaseous radionuclides emitted from the plant stack, and inhalation of airborne radioisotopes.

Since radionuclides in the gaseous and liquid effluents from the CNS essentially conform to the guidelines of Appendix I to 10 CFR 50 insignificant adverse effect on flora and fauna is anticipated from exposure to any of the pathways described above. Predicted doses to specific biota in the environs of the nuclear facility are reported in Sections 4 and 5.

2.2 Pathways to Man

The station site is located in Nemaha County, Nebraska, on the west bank of the Missouri River, at river mile 532.5, referred to by the Corps of Engineers as the lower Brownville Bend. The site surroundings are predominently agricultural with zero population within a one-half mile radius of the plant.

There are 755 farms in Nemaha County, averaging approximately 316 acres per farm. The land use is distributed approximately as follows:

Land Use	% of Total County Acreage
Agricultural	99.18
Residential Suburban	0.03
Commercial Suburban	0.01
Industrial Suburban	0.01
Urban	0.77
Total	100.00

The cultivated land within the area of the site is primarily corn, sorghum, soybean, and wheat fields and improved pasture. Cattle and hogs are also raised. As is normally the case with nuclear plants located on or near fresh water bodies, ingestion of invertebrates or aquatic plants harvested from the Missouri River does not present a potential exposure pathway to man.

Estimated annual doses from routine release of gaseous and liquid effluents for all viable pathways is presented in Sections 4.0 and 5.0.

3.0 RADIOACTIVITY IN THE ENVIRONMENT

3.1 Radioactivity in Surface Waters

Concentrations of radioactive effluents in the waters of the Missouri River, which are under the radiological influence of the CNS, were calculated in accord with methods set forth in Regulatory Guide 1.113 for "Nontidal Rivers". The specific rationale utilized is described below.

An investigation was performed to determine the concentrations of waterborne radionuclides in the Missouri River downstream of the Cooper Nuclear Station. The analysis utilized a steady-state stream tube model to compute the far-field concentrations in a two-dimensional vertically-mixed flow system (see Reference 1).

In order to apply the theoretical stream tube model (Reference 1) to the actual site conditions, the Missouri River hydraulic characteristics were estimated over a range of flow conditions. The lowest flow considered was 8,000 cfs, which corresponds to the 7-day-average once-in-10 year low flow during the winter months. Flows less than this value were not considered, since they would have a lower frequency of occurrence and/or a shorter duration and were not considered appropriate for use in the aquatic dose calculations. The largest flow considered was 30,900 cfs, which corresponds to the 7-day-average once-in-10 year low flow during the summer months. This flow is nearly equal to the annual mean flow of

32,000 cfs, hence making it the more suitable value for use in aquatic dose calculations on an annual basis.

The Missouri River channel properties were estimated over the above range of flows using certain known parameters to reconstitute observed flow characteristics. In the general site vicinity, the Missouri River has a typical bed slope of about 0.02 percent and a Manning roughness coefficient of approximately 0.026. Using these parameters and effective river width of 800 feet at a flow of 30,900 cfs, a depth of 10.2 feet was computed using the Manning equation for a wide rectangular channel. This computed depth is in close agreement with the depth of 10 to 12 feet in the site vicinity where the river is fairly uniform, which was observed at a flow of 35,000 cfs. At the lowest flow considered of 8,000 cfs, the river stage at the site is 4.9 feet lower than its stage at 30,900 cfs. Therefore, using an average depth of 10.2 - 4.9 = 5.3 feet at this lower discharge and the previous bed slope and roughness parameters, a river width of 613 feet was computed for the idealized wide rectangular cross section. The resulting average flow velocity under these conditions, 2.46 ft/sec, is consistent with observed velocities of about 2.5 ft/sec near a flow of 11,000 cfs.

After having determined the average Missouri River channel properties over the range of flow conditions, the only parameter which remained to be defined was the transverse diffusion coefficient. This coefficient was needed to

determine the lateral mixing characteristics in the steady-state stream tube model, and may be estimated for straight natural stream channels by means of Equation (11) from Regulatory Guide 1.113. For natural curbed channels, such as the Missouri River, secondary flows can lead to increased lateral mixing and a larger "beta" coefficient. On the basis of a field investigation of lateral mixing characteristics for the Missouri River downstream of the Cooper Nuclear Station, a transverse diffusion coefficient of 11.94 ft^2/sec was determined at a flow of 35,000 cfs (Reference 2). The resulting beta coefficient is 3.17, or 13.8 times greater than the value of 0.23 suggested for straight natural stream channels. The transverse diffusion coefficients were computed over the range of flows being considered, using Equations (11) from Regulatory Guide 1.113 with beta equal to 3.17 and other parameters from the previously derived channel properties. The annual release rates from liquid pathways and expected site boundary concentrations are given in Table 1.

3.2 Radioactivity in Air

Annual average dilution factors (χ/Q's) utilized in evaluating the releases of gaseous effluents were calculated according to the straight-line method set forth in Regulatory Guide 1.111, based upon 4 years of on-site meteorological data during the period May 15, 1972 through May 14, 1976. A

detailed discussion of the applicable methodology appears in Reference 3 with the results of the calculation of annual average χ/Q values listed in the tables of that report. Examination of the tables shows that the highest concentration of gaseous effluents for the ground release, which is controlling, will occur at the exclusion zone boundary in the north sector at 0.71 miles, where a relative concentration of 1.2×10^{-5} sec/m^3 was calculated.

Expected annual gaseous release rates presented in Reference 3 were used with the maximum exclusion zone boundary ground level χ/Q of 3.4×10^{-6} sec/m^3 to estimate the maximum expected undecayed radioisotope air concentrations outside the restricted area from the plant. The release rates for the unit and expected maximum off-site concentrations are listed in Table 2. 1

Concentrations in air and in environmental media for ingestion pathways are reported in Table 3 at off-site locations where maximum exposure from these pathways is anticipated to occur. These concentrations were calculated in accordance with the methods outlined in Appendix C of Regulatory Guide 1.109.

4.0 DOSE RATE ESTIMATES FOR BIOTA OTHER THAN MAN

From considerations of the exposure pathways discussed in Section 2 and the distribution of facility-derived radioactivity of Section 3, dose rate estimates to local biota have been formulated through the use of the GASPAR, AIREM, and LADTAP computer codes. These codes were based upon the methodology presented in Regulatory Guide 1.109 which uses the standard ICRP model for computation of effective radionuclide decay energies and resultant dose factors.

Doses to aquatic flora and fauna can be calculated from a knowledge of the concentrations of radionuclides in the Missouri River. Based upon radionuclide releases present (Table 1) and bioaccumulation factors in Table A-8 in Regulatory Guide 1.109, doses to fish, invertebrates, and aquatic plants living in the Missouri River near the site were calculated to be 1.18 mrad/yr, 7.60 mrad/yr, and 5.16 mrad/yr, respectively. Doses to aquatic biota living in the Missouri River downstream of the plant where the liquid effluents are well mixed (>22:1) will be quite a bit less because of dilution and radioactive decay in transit. 1

An estimate has been made of the dose to terrestrial animals such as the great blue heron, a muskrat, and a raccoon which are fish eaters, and a dabbling duck, an aquatic plant eater. The internal doses, assuming conservatively that these animals obtain all of their food from the Missouri River near the station, were as follows:

Aquatic Biota	Internal Dose mrad/yr	External Dose mrad/yr	Total mrad/yr
Muskrat	5.77E+00	1.62E-01	5.94E+00
Raccoon	1.26E-01	1.19E-01	2.45E-01
Great Blue Heron	6.92E+00	1.60E-01	7.08E+00
Dabbling Duck	5.63E+00	2.41E-01	5.87E+00

External doses to terrestrial animals such as the white-tailed deer or for squirrel from radionuclides in the gaseous effluent and from direct radiation from the plant are expected to be similar to that estimated for man. These doses are discussed in Sections 5.1 and 5.2, respectively.

The dose from radionuclides to organisms other than man will be a very small percentage of the dose resulting from naturally-occurring radiation and should be below those incurred by man. Doses to migratory animals and to flora are considerably below those calculated for principal organisms.

5.0 DOSE RATE ESTIMATES FOP MAN

Potential pathways of exposure of man to radionuclides in liquid and gaseous effluents from the CNS were identified and discussed in Section 2.0. Doses to individuals in the environs of the plant were calculated for all potentially significant pathways. The results of the calculations and the assumptions and methodology are described in the following sections. All results were obtained from the GASPAR, AIREM, and LADTAP computer codes which are based upon the computational techniques presented in Regulatory Guide 1.109. Except in the case of a 6-month cow grazing season previously documented, all usage and consumption values, transport times, bioaccumulation factors, dose conversion factors, and other constants utilized were those suggested in Regulatory Guidc 1.109.

Dilution factors for atmospheric and liquid pathways were calculated according to methods prescribed in Regulatory Guides 1.111 and 1.113, respectively, as discussed in Section 3.0.

5.1 Liquid Pathways

The doses to man derived through liquid pathways are given in Table 4. Doses were computed for drinking water, fish injestion and shoreline activity.

5.2 Gaseous Pathways

Maximum estimated doses to individuals were calculated for cloud submersion and "gamma shine", ground-plane contamination, inhalation, vegetable, cow's milk, goat's milk, and meat ingestion pathways. Assumptions, including point of exposure, are described for each pathway in the following paragraphs; the calculated gaseous pathway doses are summarized in Table 5. All estimates were based upon predicted gaseous releases in Chapter 3. Each dose was calculated at the location of the highest dose off-site at which the pathway could be assumed to exist. 1

Exposure to an individual from submersion in a cloud and "gamma shine" from the overhead stack plume containing radioactive effluents was evaluated at the site boundary with the largest ground-level atmospheric dilution, 0.71 miles in the north-northwest affected sector, and at the nearest residence, 1.1 miles northwest of the plant. The total-body doses for the two locations were 1.75 mrem/yr and 6.31×10^{-1} mrem/yr, respectively; corresponding skin doses were 3.19 mrem/yr and 1.15 mrem/yr, respectively. 1 1

External irradiation from activity deposited on ground surfaces was also evaluated at the maximum site boundary as well as the above-mentioned nearest residence. At the north-northwest site boundary, 1.62×10^{-2} mrem/yr to the total-body and 1.90×10^{-2} mrem/yr to the skin can be expected annually. 1

An individual at the nearest residence 1.1 miles northwest of the plant will experience estimated doses of 7.13×10^{-3} mrem/yr to the whole body and 8.39×10^{-3} mrem/yr to the skin, respectively. 1

The maximum individual dose from the air inhalation pathway is reported at the same two locations at which plume and ground deposition doses were reported. The maximum organ dose to an individual at these locations is to an infant's thyroid gland. Inhalation of I-131 causes about 45 percent, and I-133 the remaining 55 percent of the thyroid dose. The infant thyroid doses, respectively, are 1.94 mrem/yr and 6.80×10^{-1} mrem/yr. 1

The predicted dose to an individual obtaining 76 percent (stipulated in Regulatory Guide 1.109) of his vegetable consumption from a garden adjacent to residences was determined. The garden which received the largest exposure was located at 1.8 miles north-northwest. The maximum calculated exposure from this pathway was to a child's thyroid, 4.32×10^{-1} mrem/yr, 1.8 miles north northwest of the plant. Corresponding total-body dose at this location was 1.13×10^{-2} mrem/yr. About 92 percent of the thyroid dose and 26 percent of the total body dose was due to I-131. 1

Cows and goats are expected to graze on pasture land exposed to radioparticulates deposited from the CNS effluent plume for 6 months of the year. Since an objective of this study is to determine the maximum point of exposure for each pathway, the meteorological diffusion conditions were used to

select the worst dose location. It has been determined that milk cows located at 3.70 miles northwest of the facility will be exposed to the highest radionuclide concentrations. Milk cows located 3.40 miles northeast of the plant were also scrutinized owing to closely similar meteorological diffusion conditions. The cow-milk pathway was evaluated at both locations since the resultant thyroid doses were deemed to be of the same magnitude. The maximum organ dose from ingestion of milk from a cow grazing 6 months of the year at the two locations mentioned above occurred to an infant's thyroid gland and was 1.31 mrem/yr and 0.74 mrem/yr, respectively. The infant is also expected to receive the maximum total-body dose at those locations, 1.23×10^{-2} mrem/yr and 4.36×10^{-3} mrem/yr, respectively. Ninety-five percent of these thyroid doses are attributed to I-131, as expected, while 84 percent of the total-body dose also comes from I-131.

There are indications that domestic goats may be used locally for milk in the vicinity of the plant. Therefore, consumption of contaminated goat's milk is considered an expected pathway to man during the life of the plant, even though there is little indication of the sale of goat's milk commercially. The only goats within 5 miles of the release points are located 2.60 miles from the facility in the southwest direction. It was determined that the maximum organ dose was to an infant's thyroid, 8.49×10^{-1} mrem/yr. The corresponding total-body dose was maximum to an infant at 5.06×10^{-3} mrem/yr.

Exposure from consumption of meat was evaluated at a site 2.00 miles north-northwest of the plant. The maximum organ dose to an individual from ingestion of meat from beef cattle grazing 6 months of the year was to a child's thyroid at this location, 1.91×10^{-2} mrem/yr. The maximum total-body dose from the meat ingestion pathway was 1.62×10^{-3} mrem/yr. 1

A summary of the dose results appears in Table 7. Indications are that the plume shine and submersion pathway and cow milk pathway produce the greatest total-body doses and the air inhalation pathway yields the maximum organ dose to the thyroid gland of an infant located at the maximum site boundary location of 0.71 miles north-northwest of the plant. Garden, air inhalation, cow's and goat's milk and meat consumption produce smaller contributions to the total dose, with irradiation from ground-plane deposition of radionuclides in the plume being the least important total-body exposure pathway. 1 1

6.0 ANNUAL POPULATION DOSES

Total-body (man-rem) and (thyroid-rem) doses to the population within 50 miles of the site for the year 1970 were calculated using GASPAR and LADTAP, the computer codes based on the methodology found in Appendix D of Regulatory Guide 1.109. The following sections discuss specific assumptions used for the liquid and gaseous pathway calculations. The results appear in Table 6.

The resultant doses from the CNS will be well below those levels currently limiting effluents from light-water-reactors, and will be only a small percentage of the 140 mrem/yr total-body dose from naturally occurring environmental background radiation anticipated in the four state area covering Missouri, Kansas, Nebraska, and Iowa for individuals. The maximum potential individual doses from the CNS will also be well below those doses received from ordinary and acceptable radiation exposures. For example, in 1970 it was estimated that annual per capita abdominal radiation dose for exposed population to medical radiography was 153 mrem annually. Doses from radium watches reported in 1963 were between 1.3 and 5.3 mrem/yr to the whole-body.

Exposure of each of the 172,000 people that are residents within a 50-mile radius of the plant to the current 140 mrem annual whole-body naturally occurring environmental radiation level would result in a population dose of 2.41×10^4 man-rem. This contrasts with total-body man-rem dose from

the Cooper Nuclear Station of 1.02 man-rem. Thus, the contribution to the total man-rem commitment from the CNS is a very small fraction of that which will conservatively be attributable to background radiation; the radiological impact of the plant on the area population is, therefore, expected to be negligible.

6.1 Liquid Pathways

Population doses were calculated for fish, drinking water ingestion and shoreline, swimming, and boating exposure pathways.

The dose to the population from fish ingestion was based upon a commercial fish harvest of 7.6×10^3 kg of fish taken near the discharge canal (dilution 5:1) and 7.6×10^3 kg of fish taken downstream where the liquid effluents are deemed well mixed (22:1). There is nc reported use of the Missouri River for potable or irrigation purposes within 50 miles downstream of the Cooper Station. Thus these doses do not contribute to the dose to an individual or to the general population. However, a hypothetical computation was made in the event that the entire 50-mile population derived its drinking water at a location where the Missouri River was well mixed. The resultant worst possibility produced only 0.05 man-rems.

Calculation of population doses from recreational exposures was based on usage rates of 8.61×10^5, 8.61×10^5,

1.72×10^6 man-hours per year for shoreline, swimming, and boating activity, respectively. It was assumed that the above man-hours were spent near the discharge canal and an equal number of man-hours were spent in waters well mixed with respect to the effluent discharge.

Population doses from liquid effluents are very small. The expected man-rem dose from consumption of commercially caught fish is approximately 6×10^{-4} man-rem to the whole body. This dose is an order of magnitude smaller than shoreline recreational activity dose postulated for exposure in the vicinity of the discharge canal. Swimming and boating population doses are th same magnitude as that expected from fish consumption. 1

6.2 Gaseous Pathways

Population doses from gaseous effluents were calculated for cloud submersion and shine, ground-plane contamination, air inhalation, and vegetable, cow's milk, and meat ingestion pathways. Atmospheric dispersion factors (χ/Q's) and relative deposition were presented in Reference 3. Year 1970 population and production figures for meat, milk, and vegtable production numbers projects were 1.9×10^7kg, 5.7×10^7 liters, and 9.0×10^6kg, respectively. The resultant population doses are shown in Table 6 for total-body and thyroid gland. The largest contribution to total-body dose comes from submersion in the three plume sources. More than 1

half of the thyroid man-rems is attributable to the cow's milk pathway.

Table 7 compares the calculated doses of CNS to the design objectives of Appendix I. It should be noted that design objectives are met in all cases. 1

7.0 REFERENCES

(1) Aquatic Transport and Dispersion of Liquid Effluent per Regulatory Guide 1.113, Cooper Nuclear Station, Nebraska Public Power District, Dames & Moore, November 3, 1976.

(2) Sayre, William W. and Yeh, Tso-Ping, 1973, Transverse Mixing Characteristics of the Missouri River Downstream from the Cooper Nuclear Station, Report No. 145, Iowa Institute of Hydraulic Research.

(3) Atmospheric Diffusion Analysis for Annual Average Relative Concentrations, Concentrator Depletion, and Deposition for Appendix I Analysis per Regulatory Guide 1.111, Cooper Nuclear Station, Nebraska Public Power District, Dames & Moore, November 3, 1976.

TABLE 1

EXPECTED CONCENTRATIONS OF RADIOACTIVE MATERIALS IN ENVIRONMENTAL MEDIA FROM LIQUID EFFLUENTS OF THE COOPER NUCLEAR STATION

Isotope	Annual Release (Ci/Yr)	Expected Site Boundary Concentration (μCi/ml)
Na-24	4.40E-02	1.96E-12
P -32	2.70E-03	1.20E-13
Cr-51	7.20E-02	3.20E-12
Mn-54	1.90E-03	8.44E-14
Mn-56	3.10E-02	1.38E-12
Fe-55	1.60E-02	7.11E-13
Fe-59	4.50E-04	2.00E-14
Co-58	7.10E-03	3.16E-13
Co-60	1.50E-02	6.67E-13
Ni-63	2.00E-05	8.89E-16
Ni-65	1.80E-04	8.00E-15
Cu-64	1.30E-01	5.78E-12
Zn-65	3.10E-03	1.38E-13
Zn-69m	9.20E-03	4.09E-13
Zn-69	9.70E-03	4.31E-13
W -187	2.00E-03	8.89E-14
Np-239	6.40E-02	2.84E-12
Br-83	2.30E-03	1.02E-13
Br-84	1.20E-04	5.33E-15
Rb-89	1.90E-04	8.44E-15
Sr-89	1.50E-03	6.67E-14
Sr-90	9.00E-05	4.00E-15
Y -90	4.00E-05	1.78E-15
Sr-91	1.40E-02	6.22E-13
Y -91m	8.50E-03	3.78E-13
Y -91	9.00E-04	4.00E-14
Sr-92	6.70E-03	2.98E-13
Y -92	1.60E-02	7.11E-13
Y -93	1.40E-02	6.22E-13
Zr-95	1.10E-04	4.89E-15
Nb-95	1.10E-04	4.89E-15
Zr-97	3.00E-05	1.33E-15
Nb-97	3.00E-05	1.33E-15
Mo-99	1.90E-02	8.44E-13
Tc-99m	5.40E-02	2.40E-12
Tc-101	2.00E-04	8.89E-15
Ru-103	4.40E-04	1.96E-14
Ru-105	2.70E-03	1.20E-13

TABLE 1 (Continued)

Isotope	Annual Release (Ci/Yr)	Expected Site Boundary Concentration (μCi/ml)
Rh-105	1.60E-03	7.11E-14
Ru-106	2.40E-03	1.07E-13
Ag-110m	4.60E-04	2.04E-14
Te-129m	5.90E-04	2.62E-14
Te-129	3.80E-04	1.69E-14
Te-131m	7.30E-04	3.24E-14
Te-131	1.30E-04	5.78E-15
I -131	2.50E+00	1.11E-10
Te-132	1.00E-04	4.44E-15
I -132	2.10E-02	9.33E-13
I -133	9.60E-01	4.27E-11
I -134	6.10E-03	2.71E-13
Cs-134	2.90E-02	1.29E-12
I -135	1.50E-01	6.67E-12
Cs-136	9.90E-03	4.40E-13
Cs-137	6.00E-02	2.67E-12
Cs-138	6.10E-03	2.71E-13
Ba-139	2.00E-03	8.89E-14
Ba-140	5.30E-03	2.36E-13
La-140	2.30E-03	1.02E-13
Ba-141	4.00E-05	1.78E-15
La-141	7.80E-04	3.47E-14
Ce-141	4.80E-04	2.13E-14
La-142	1.40E-03	6.22E-14
Ce-143	2.30E-04	1.02E-14
Pr-143	5.50E-04	2.44E-14
Ce-144	5.20E-03	2.31E-13
Pr-144	5.00E-05	2.22E-15
Nd-147	4.00E-05	1.78E-15
H -3	3.10E+10	1.38E-09

TABLE 2

EXPECTED MAXIMUM OFF-SITE CONCENTRATIONS OF RADIOACTIVE MATERIALS IN GASEOUS EFFLUENTS FROM THE COOPER NUCLEAR STATION

	Annual Ground Level Release (Ci/Yr) (1)	(Expected) Site Boundary Concentration (μCi/ml) (2)
H-3	1.55E+01	1.67E-12
Kr-85m	7.40E+01	7.98E-12
Kr-87	1.36E+02	1.47E-11
Kr-88	2.36E+02	2.54E-11
Xe-133	2.69E+03	2.90E-10
Xe-135m	7.42E+02	8.00E-11
Xe-135	1.09E+03	1.18E-10
Xe-138	1.41E+03	1.52E-10
I-131	4.57E-01	4.93E-14
I-133	1.69E+00	1.82E-13
Cr-51	1.31E-02	1.41E-15
Mn-54	9.60E-04	1.04E-16
Fe-59	6.58E-04	7.09E-17
Co-58	6.57E-04	7.08E-17
Co-60	3.10E-03	3.34E-16
Zn-65	2.55E-04	2.75E-17
Sr-89	6.01E-03	6.48E-16
Sr-90	2.31E-05	2.49E-18
Zr-95	1.08E-04	1.16E-17
Sb-124	3.04E-04	3.28E-17
Cs-134	4.28E-04	4.61E-17
Cs-136	6.25E-05	6.74E-18
Cs-137	8.10E-04	8.73E-17
Ba-140	1.10E-02	1.18E-15
Ce-141	6.28E-04	6.77E-17

(1) No radioactive decay assumed.

(2) Expected concentration in worst sector averaged over a 1-year period.

TABLE 3

PREDICTED CONCENTRATIONS OF RADIOACTIVE MATERIALS FROM PLANT EFFLUENTS IN ENVIRONMENTAL MEDIA - INGESTION PATHWAYS

Location	Isotope[1]	Concentration in Milk (pCi/l)	Concentration in Meat (pCi/Kg)	Concentration in Vegetation or Forage (pCi/Kg)
	MILK PATHWAY			
Nearest Cow (3.70 miles NW)	H-3	3.26E+00	N/A	6.51E+00
	C-14	6.01E+00	N/A	1.00E+01
	I-131	2.87E-01	N/A	1.13E+00
	I-133	4.15E-02	N/A	6.73E-01
	MEAT AND VEGETABLE INGESTION			
Nearest Garden	H-3	N/A	1.04E+01	3.83E+02[2]
Nearest Steer (2.0 miles NNW)	C-14	N/A	1.59E+01	1.47E+02
	I-131	N/A	7.88E-02	2.61E+00
	Co-60	N/A	1.83E-02	4.65E-02

(1) Isotopes not listed contributed less than 1 percent of the calculated dose to any organ from these pathways.

(2) χ/Q used for total release was ground level value.

TABLE 4

SUMMARY OF CALCULATED LIQUID PATHWAY DOSES
COOPER NUCLEAR STATION

Pathway	Location	Age Group	Organ Receiving Maximum Dose: Organ	Organ Receiving Maximum Dose: Dose (mrem/yr)	Total-Body Dose mrem/yr
Drinking Water	Vicinity of Discharge Canal	Adult	Thyroid	6.05E-01	2.68E-03
		Teen	Thyroid	4.95E-01	1.89E-03
		Child	Thyroid	1.19E+00	3.85E-03
		Infant	Thyroid	2.88E+00	6.56E-03
Fish Ingestion	Vicinity of Discharge Canal	Adult	Thyroid	2.34E-01	6.66E-02
		Teen	Thyroid	2.08E-01	3.88E-02
		Child	Thyroid	2.16E-01	1.55E-02
Shoreline Activity	Vicinity of Discharge Canal	Adult	Skin	7.62E-05	6.51E-05
		Teen	Skin	4.26E-04	3.64E-04
		Child	Skin	8.89E-05	7.60E-05

TABLE 5

SUMMARY OF CALCULATED GASEOUS PATHWAY DOSES
COOPER NUCLEAR STATION

Pathway	Location	Age Group	Organ Receiving Maximum Dose: Organ	Organ Receiving Maximum Dose: Dose (mrem/yr)	Total-Body Dose (mrem/yr)
Cloud	Maximum Site Boundary (0.71 Miles NNW)	All	Skin	3.19	1.75
Ground Plane Contamination	"	All	Skin	1.90E-02	1.62E-02
Air Inhalation	"	Adult	Thyroid	9.48E-01	3.28E-03
		Teen	Thyroid	8.18E-01	2.44E-03
		Child	Thyroid	1.13	3.09E-03
		Infant	Thyroid	1.04	3.88E-03
Vegetable Ingestion	Nearest Garden (1.80 Miles NNW)	Adult	Thyroid	3.52E-01	4.56E-03
		Teen	Thyroid	2.81E-01	5.54E-03
		Child	Thyroid	4.32E-01	1.13E-02

TABLE 5 (Continued)

Pathway	Location	Age Group	Organ Receiving Maximum Dose: Organ	Organ Receiving Maximum Dose: Dose (mrem/yr)	Total-Body Dose (mrem/yr)
Cow Milk Ingestion	Nearest Cow (3.7 Miles NW)	Adult	Thyroid	1.80E-01	1.59E-03
		Teen	Thyroid	2.72E-01	2.59E-03
		Child	Thyroid	5.42E-01	6.00E-03
		Infant	Thyroid	1.31	1.23E-02
Meat Ingestion	Nearest Steer (2.00 Miles NW)	Adult	Thyroid	1.80E-02	1.22E-03
		Teen	Thyroid	1.25E-02	8.99E-04
		Child	Thyroid	1.91E-02	1.62E-03

TABLE 6

PREDICTED DOSES TO THE POPULATION WITHIN 50 MILES OF THE COOPER NUCLEAR STATION

Pathway	Total Body Dose man-rem	%	Thyroid Dose man-rem	%
Gaseous Effluents				
Plume	5.26E-1	94.6	5.26E-1	27.2
Ground	4.81E-3	0.9	4.81E-3	0.2
Inhalation	1.01E-3	0.2	2.41E-1	12.5
Vegetation Ingestion	5.62E-3	1.0	3.07E-1	15.9
Cow Milk Ingestion	9.92E-3	1.8	8.04E-1	41.5
Meat Ingestion	8.71E-3	1.5	5.31E-2	2.7
TOTAL, Gaseous Pathways	5.56E-1	100.0	1.94E+0	100.0
Liquid Effluents				
Fish Consumption	5.84E-4	4.3	1.19E-3	8.5
Shoreline	5.76E-3	42.9	5.75E-3	41.0
Swimming	7.88E-4	5.9	7.88E-4	5.6
Boating	7.88E-4	46.9	6.30E-3	44.9
TOTAL, Liquid Pathways	7.92E-3	100.0	1.40E-2	100.0
Total Population Dose	5.64E-1		1.95E+0	

1

TABLE 7

APPENDIX I CONFORMANCE SUMMARY TABLE
COOPER NUCLEAR STATION

	Appendix I Criteria		Cooper Nuclear Station	
Type of Dose	Design Objective(1)	Point of Dose Evaluation	Calculated Dose	Point of Dose Evaluation(9)
Liquid Effluents				
Dose to total body from all pathways	5 mrem/yr per site	Location of the highest dose offsite	0.069 mrem/yr(7)	Vicinity of Discharge Canal
Dose to any organ from all pathways	5 mrem/yr per site	Same as above	2.88 mrem/yr(8)	Vicinity of Discharge Canal
Gaseous Effluents				
Gamma dose in air	10 mrad/yr per site	Location of the highest dose offsite (3)	2.52 mrad/yr	Location of highest annual average concentration at the site boundary (N at 0.71 mile)
Beta dose in air	20 mrad/yr per site	Same as above	1.64 mrad/yr	Same as above
Dose to total body	5 mrem/yr per site	Location of the highest dose offsite (2)	1.75 mrem/yr	Same as above
Dose to skin of an individual	15 mrem/yr per site	Same as above	3.19 mrem/yr	Same as above

Radioiodines and Particulates[4] Released to the Atmosphere

Dose to any organ from all pathways	15 mrem/yr per site	Location of the highest dose offsite[5]	1.42 mrem/yr[6]	Worst cow (NW at 3.70 miles)

(1) Design objectives as specified in the Commission's Appendix I Conformance Option, 40 FR 40816, September 4, 1975.

(2) Evaluated at a location that is anticipated to be occupied during plant lifetime or evaluated with respect to such potential land and water usage and food pathways as could actually exist during the term of plant operation.

(3) Evaluated at a location that could be occupied during the term of plant operation.

(4) Doses due to tritium intake from terrestrial food chains are included in this category.

(5) Evaluated at a location where an exposure pathway actually exists at time of licensing. However, if the applicant determines design objectives with respect to radioactive iodine on the basis of existing conditions and if potential changes in land and water usage and food pathways could result in exposures in excess of the guideline values given above, the applicant should provide reasonable assurance that a monitoring and surveillance program will be performed to determine: 1) the quantities of radioactive iodine actually released to the atmosphere and deposited relative to those estimated in the determination of design objectives; 2) whether changes in land and water usage and food pathways which would result in individual exposures greater than originally estimated have occurred; and 3) the content of radioactive iodine and foods involved in the changes if and when they occur.

(6) Dose to an infant thyroid from air inhalation and cow milk ingestion.

(7) Dose to an adult from potential drinking Missouri River water, fish ingestion, and shoreline recreational exposure.

(8) Dose to infant thyroid from the same pathways as (7).

(9) Points given correspond to points of dose evaluation under Appendix I heading.

CHAPTER 5

ADDITIONAL INFORMATION NEEDED FROM HOLDERS OF PERMITS OR LICENSES TO CONSTRUCT OR OPERATE LIGHT-WATER-COOLED REACTORS FOR WHICH APPLICATION WAS FILLED PRIOR TO JANUARY 2, 1976

Reference: Enclosure 2 of NRC letter dated February 19, 1976

Revision 1
1/78

Item 1. Provide the information requested in Appendix A of Regulatory Guide 1.112.

Response:

APPENDIX A

DATA NEEDED FOR RADIOACTIVE SOURCE TERM CALCULATIONS FOR BOILING WATER REACTORS

The information listed in this appendix constitutes the basic data required in calculating the releases of radioactive material in liquid and gaseous effluents (the source terms). All responses are on a per-reactor basis.

1. General

   a. The maximum core thermal power (MWt) evaluated for safety considerations in the SAR.

      2,486 MWt

   b. The quantity of tritium in liquid and gaseous effluents (Ci/yr per reactor).

      31 Ci/yr in liquid and 31 Ci/yr in gaseous effluent

2. Nuclear Steam Supply System

   a. Total steam flow rate (lb/hr).

      10.24×10^6 lb/hr

   b. Mass of reactor coolant (lb) in the reactor vessel at full power.

      The mass of water in the reactor vessel is 432,000 lb and the mass of steam in the reactor vessel is 2,540 lb.

3. Reactor Coolant Cleanup System

   a. Average flow rate (lb/hr).

      1.0×10^5 lb/hr

   b. Demineralizer type (deep bed or powdered resin) and size (ft).

      Powdered resin, 2 units, 85 square feet of exchange area per unit. | 1

c. Regeneration or replacement frequency.

Weekly

d. Regenerant (backwash) volume (gal/event) and activity (if applicable).

275 gal/backwash

4. Condensate Demineralizers

a. Average flow rate (lb/hr).

10.24×10^6 lb/hr

b. Demineralizer type (deep bed or powdered resin).

Deep bed

c. Number and size (ft^3) of demineralizers.

6 demineralizers, each approximately 292 cubic feet with 922 square feet of exchange area.

d. Regeneration or replacement frequency.

Weekly

e. Indicate whether ultrasonic resin cleaning is used and the waste liquid volume associated with its use.

No

f. Regenerant (backwash) volume (gal/event) and activity.

6,000 gal/backwash

5. Liquid Waste Processing Systems

a. For each liquid waste processing system, provide, in tabular form, the following information:

(1) Sources, flow rates (gal/day), and expected activities (fraction of primary coolant activity (PCA) for all inputs to each system).

(2) Holdup times associated with the collection, processing, and discharge of all liquid streams.

(3) Capacities of all tanks (gal) and processing equipment (gal/day) considered in calculating holdup times.

(4) Decontamination factors for each processing step.

(5) The fraction of each processing stream expected to be discharged over the life of the plant.

(6) For waste demineralizer regeneration, the time between regenerations, regenerant volumes and activities, treatment of regenerants, and fractions of regenerant discharged. Include parameters used in making these determinations. |1

(7) Liquid source term by radionuclide (in Ci/yr) for normal operation, including anticipated operational occurrences (Table 1-1).

HIGH PURITY WASTE

Inputs from Reg. Guide 1.112

	gal/day	PCA
1. Dry well	3400	1.0
2. Containment, auxiliary building, and fuel pool	3720	0.01
3. Radwaste building	1060	0.01
4. Turbine building	2960	0.01
5. Resin Rinse	5000	0.002
	16140	0.22

Decontamination Factors:

	Filter	MB Ionex	Total
I	1	10^2	10^2
Cs, Rb	1	10	10
Others	1	10^2	10^2

Collection Time:

$$\frac{22{,}000 \times 0.4}{16{,}140} = 0.55 \text{ days}$$

Processing Time:

$$\frac{22{,}000 \times 0.4}{270 \times 1440} = 0.02 \text{ days}$$

Ignore Discharge Time

Fraction discharged = 1 percent

LOW PURITY WASTE

Inputs from Reg. Guide 1.112

		gal/day	PCA
1.	Dry well	700	1.0
2.	Containment, auxiliary building, and fuel pool	2000	0.01
3.	Radwaste Building	1000	0.01
4.	Turbine Building	2000	0.01
		5700	0.13

Decontamination Factors:

	Filter	MB Ionex	Total
I	1	10^2	10^2
Cs, Rb	1	2	2
Others	1	10^2	10^2

Collection Time:

$$\frac{20{,}000 \times 0.4}{5700} = 1.4 \text{ days}$$

Processing Time:

$$\frac{20{,}000 \times 0.4}{65 \times 1440} = 0.09 \text{ days}$$

Fraction Discharged = 100 percent

CHEMICAL & REGENERATION WASTES

Inputs from Reg. Guide 1.112

Chemical Waste:

	gal/day	PCA
Lab Drains	500	0.02
Chemo Lab	100	0.02
	600	0.02
Regenerants:	3400	
Total	4000	

Decontamination Factors:

I	10^3
Cs	10^4
Others	10^4

Collection Time:

$$\frac{4500 \times 0.4}{4000} = 0.45 \text{ days}$$

Processing Time:

$$\frac{4500 \times 0.4}{10 \times 1440} = 0.13 \text{ days}$$

Fraction Discharged = 100 per cent

Detergent wastes decontamination factor = 1

b. Provide piping and instrumentation diagrams and process flow diagrams for the liquid radwaste systems and for all other systems influencing the source term calculations.

See the attached diagrams and the schematic (Figure 1-1).

6. Main Condenser and Turbine Gland Seal Air Removal Systems

a. The holdup time (hr) for offgases from the main condenser air ejector prior to processing by the offgas treatment system.

0.5 hours

b. A description and the expected performance of the gaseous waste treatment systems for the offgases from the condenser air ejector and mechanical vacuum pump. Include the expected air inleakage per condenser shell, the number of condenser shells, and the iodine source term from the condenser.

The major gaseous waste steam from the BWR, as they were originally designed, is the exhaust from the steam jet air ejector which removes non-condensibles from the condenser. At Cooper Station the air ejector off gas is now put through a catalytic recombiner (to convert the contained hydrogen to water), condenser, drier, cooler, and then through massive beds of charcoal which serve to hold up the noble gases, krypton and xenon, for periods of from hours to days allowing all of the shorter lived noble gases to decay prior to release to the atmosphere. This also effectively removes the iodine isotopes from this stream. | 1

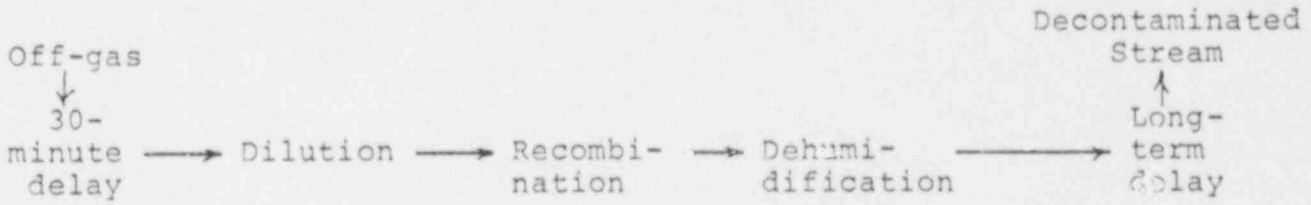
The Off-gas System is designed to handle off-gas flow from the plant during operation with maximum air inleakage at 130°F. The Off-gas System design parameters are as follows:

Sizing:	The equipment is installed in two parallel trains, each with 100% capacity except for the charcoal beds which can be operated in several arrangement modes.
Decontamination Factor (DF):	1000 minimum, based on the 30-minute activity level of 100,000 μci/sec
Operation:	Continuous and Automatic Remote control capability Reduced flow operation capability

Safety and Reliability:	Redundancy Failsafe control systems Safety monitoring and alarm systems Elimination of potential leakage of radioactive elements Elimination of potential hydrogen explosion 350 psig Design Pressure
Mechanical Design:	40-year useful life expectancy Components per ASME Code, Section III, Class 3 (process isde radioactive components) Components (nonradioactive) per ASME Code, Section VIII, Division 1 Seismic Design, Class IIS
Configuration:	Skid-mounted equipment modules and individual components

PROCESS DESIGN

The processes required to satisfy the system parameters are basically 30-minute delay, dilution, recombination, dehumidification, and long-term delay, as shown below:



After the off-gas stream passes through the 30-minute delay pipe and existing filters, the steam jet air ejection dilutes the off-gas stream raising pressure to the required system inlet pressure. In the recombination process, the hydrogen and oxygen are recombined stoichiometrically. Dehumidification consists of moisture removal prior to long-term delay to reduce the dewpoint of the gas to a very low level. Long term delay for the decay of the noble isotopes is achieved in a series of charcoal beds. 1

Hydrogen Dilution

The off-gas stream, after a 30-minute delay in an existing delay pipe, enters the Augmented Off-gas Treatment System. The nominal hydrogen concentration is much greater than the lower hydrogen flammability limit of 4.1% and requires

dilution of the off-gas stream to reduce hydrogen concentration to a safe level. The dilution requirements are based on minimum bleed air flow, which results in the highest concentration of hydrogen as the worst-case condition as shown in the table below:

Stream Composition After Dilution

	VOLUME		MASS	
COMPONENT	% by Vol.	Rate lb-mol/hr	Rate lb/hr	% by Wt.
Hydrogen (H_2)	3.96	15.77	31.80	0.45
Oxygen (O_2)	1.98	7.88	254.00	3.61
Air	0.23	0.93	26.97	0.38
Steam (H_2O)	93.82	373.30	6719.40	95.55
Total	100.00	397.90	7032.20	100.00

This steam requirement may be supplied in full from the plant nuclear steam; however, to reduce the steam consumption of recycle loop is present.

Recycle Loop

This continuous steam requirement of 6640 lb/hr is a major operating cost in other systems as all this steam is later condensed and removed from the process gas stream. A recycle dilution loop reduces both steam and cooling water consumption substantially. The recycle loop withdraws a large portion of steam from the post-recombiner condenser and recirculates it back to the inlet for dilution. This recirculation, utilizing external steam as the motive force in an ejector, also maintains the inlet gas temperature well above saturation temperature to prevent condensation of moisture on the recombiner catalyst bed.

At all times the recycle loop will have a minimum flow of 4280 lb/hr which is designed to maintain less than 4% hydrogen concentration under all operating conditions.

Hydrogen analyzers are installed at both the upstream and down stream ends of the augmented off-gas system. Also the recombiners are equipped with temperature sensors and alarms. This instrumentation system will indicate

any anomalies in the hydrogen concentration and permit corrective action as required.

Recombination

The recombination process is carried out in a single stage catalytic recombiner. Prior to entering the recombiner, the off-gas stream must have hydrogen concentration lower than 4% for safety and must be preheated above the saturation temperature. As explained previously, the stream entering the recombiner is sufficiently diluted and also is preheated to about 350°F during normal operation. This dilution is also sufficient for minimum bleed air flow of 6.0 scfm; in this worst-case condition, the hydrogen concentration is still only 3.96%.

It is essential that the recombiner catalyst remain dry at all times to preserve its reactivity; therefore, to prevent condensation of moisture on the catalyst bed during startup, a steam-heated preheater is used to raise the temperature of the off-gas stream from 291 to 350°F. Since the steam ejector is not operating prior to start-up, a startup blower provides the motive force. The recombiner is also preheated to and maintained at 350 ± 5°F prior to startup by an external 2 kw electric heater.

In the recombiner, most of the hydrogen and oxygen present in the inlet stream are catalytically combined, reducing the hydrogen concentration from 4% on a wet basis to 1% maximum, dry basis. The heat of reaction, with the formation of water vapor, raises the temperature of the gas stream by about 500°F as it passes through the recombiner catalyst bed. With inlet temperature maintained at 350 ± 5°F, the temperature of the effluent gas stream will therefore be 850°F.

The hot effluent consists principally of steam, with air and very small quantities of radioactive gases (krypton and xenon). On leaving the recombiner, this stream flows to a post-recombiner condenser.

Dehumidification

The stream in the post-recombiner condenser is now desuperheated, condensed and cooled to 135°F. Condensate at 120°F (maximum) is used as the cooling medium. From this condenser, a portion of the partially desuperheated stream (at a temperature of about 400°F) is withdrawn to furnish flow for the recycle loop. The remaining

stream is further cooled, then flows to a water separator where the condensed liquid is separated from the gas stream and cycled back to the hotwell.

The effluent gas from the water separator is cooled further to 35°F in a cooler-condenser; a glycol cooler system provides the necessary refrigeration. Condensate is removed in a moisture separator and is sent directly to the hotwell.

Drying

The gas stream is then dried to an -60°F dewpoint by passing it through an adsorbent bed of a cyclic dryer system. The adsorbent employed is a synthetic zeolite, Molecular Sieve 3A, which is specific to the water molecule. The cyclic dryer system contains two beds, each of which has the capacity of adsorbing water contained in the process stream at maximum flow rate for 12 hours. The two beds are alternately placed on-stream every 12 hours, at which time the exhausted bed is regenerated. For regeneration, a dry gas stream, withdrawn downstream of the dryer system, is heated by an electric heater and fed to the exhausted dryer bed. This gas stream is returned to the inlet of the AOG system by the ejector along with the offgas stream and recombiner recycle flow. The same stream is utilized to cool the dryer bed to near-ambient temperature. The moisture removed from the dryer bed during regeneration process is thus subsequently eliminated from the AOG system during the dehumidification process in the cooler-condenser.

The regeneration accomplished in this manner is a closed loop operation eliminating the possibility of accidental release of residual gases to the atmosphere.

Long-Term Delay

For decay of radioactive isotopes, the gas stream is passed through a series of charcoal adsorber beds. The charcoal delay subsystem operates on the adsorptive delay theory as described in ORNL-CF-59-6-47 (1959) by W. E. Browning, et al. A lower than ambient operating temperature of 0°F is selected as the adsorption coefficients, K, of krypton and xenon increase with decrease in temperature. Experiments were conducted by Oak Ridge using tracer gases to determine K values at various temperatures. Also the contractor conducted its own experiments utilizing argon as a sweep gas and krypton, xenon and carbon dioxide as the constituents.

There are two main condenser shells. The iodine source term from mechanical vacuum purge is 0.03 Curies I-131.

c. The mass of charcoal (tons) in the charcoal delay system used to treat the offgases from the main condenser air ejector, the operating and dew point temperatures of the delay system, and the dynamic adsorption coefficients for Xe and Kr.

   66.6 tons charcoal set to operate at $0^{\circ}F$ and $-20^{\circ}F$ dewpoint. Krypton dynamic adsorption coefficient 105 cm^3/g. Xe dynamic adsorption coefficient is 2410 cm^3/g. These numbers are from NUREG-0016.

d. A description of the cryogenic distillation system, the fraction of gases partitioned during distillation, the holdup in the system, storage following distillation, and the expected system leakage rate.

   None

e. The stream flow (lb/hr) to the turbine gland seal and the source of the steam (primary or auxiliary).

   10.24×10^3 lb/hr primary steam

f. The design holdup time (hr) for gas vented from the gland seal condenser, the iodine partition factor for the condenser, and the fraction of radioiodine released through the system vent. Describe the treatment system used to reduce radioiodine and particulate releases from the gland seal system.

   Gland seal condenser design holdup time 0.02 hours; iodine partition factor 1.0; fraction of iodine released through the system vent is approximately 1.6 percent.

g. Piping and instrumentation diagrams and process flow diagrams for the gaseous waste treatment system and for all other systems influencing the source term calculations.

   See attached diagrams and schematic (Figure 1-2).

7. Ventilation and Exhaust Systems

For each plant building that houses a main condenser evacuation system, a mechanical vacuum pump, a turbine gland seal system exhaust, or a system that contains radioactive materials, provide the following:

a. Provisions incorporated to reduce radioactivity releases through the ventilation or exhaust systems.

b. Decontamination factors assumed and the bases (included charcoal adsorbers, HEPA filters, and mechanical devices).

c. Release rates for radioiodines, noble gases, and radioactive particulates and their bases (Table 1-2).

The containment building has both charcoal and HEPA filters. The turbine building has no charcoal or HEPA filters and no special features. Both the auxiliary building and radwaste building have no charcoal filters but do have HEPA filters. A charcoal delay system is used to treat the offgas from the condenser air ejector. Decontamination factors were selected in accord with NRC Regulatory Guide 1.112 as stated in NUREG-0016.

d. Description of the release points, including height above grade, height above and location relative to adjacent structures, expected average temperature difference between gaseous effluents and ambient air, flow rate, exit velocity, and size and shape of flow orifice.

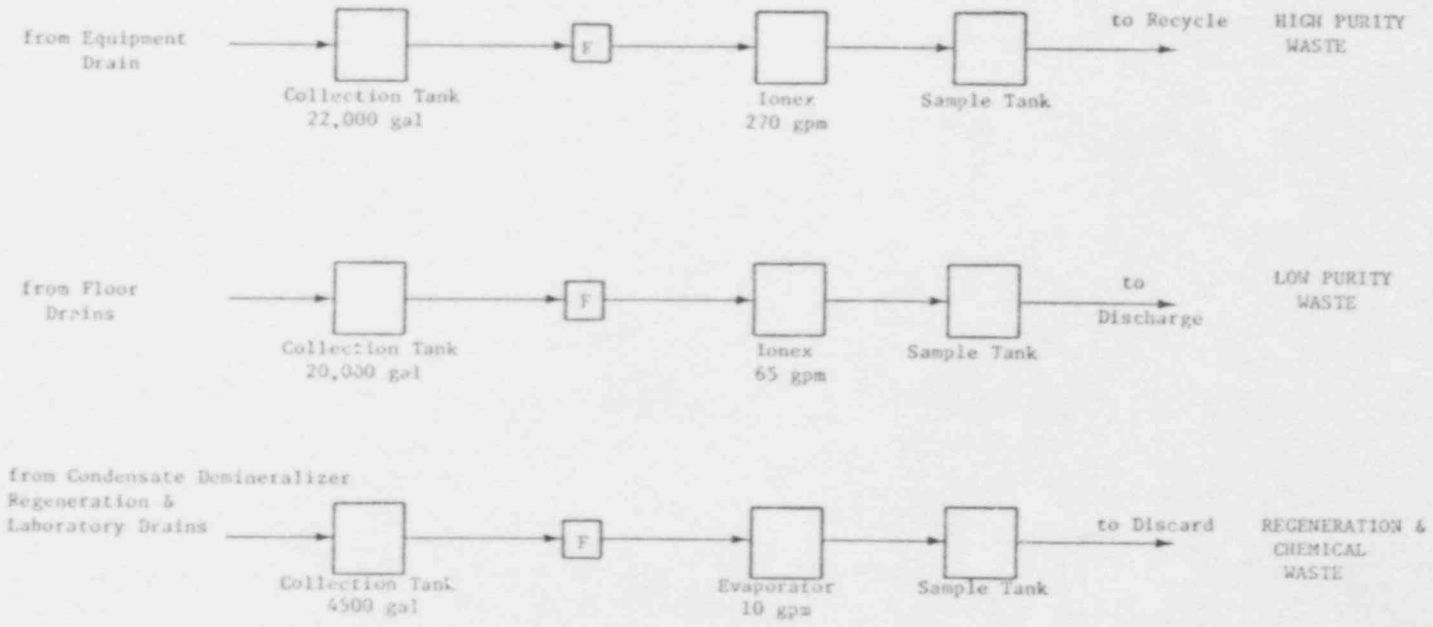
See Table 1-3.

e. For the containment building, the expected purge and venting frequencies and duration and the continuous purge rate (if used).

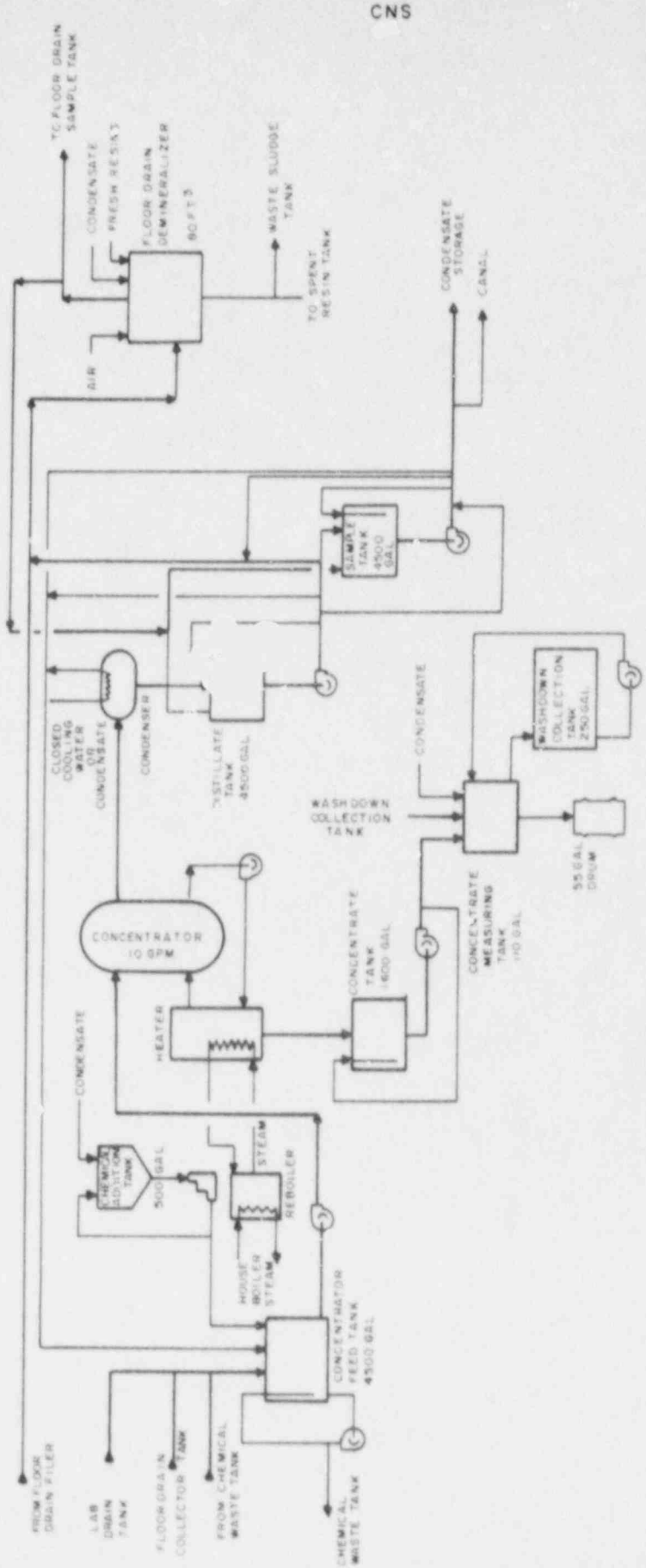
This information can be found in the document "Cooper Nuclear Station Semi-Annual (and Annual) Operating Reports-Radwaste Effluents."

Figure 1-1

Liquid Waste Treatment Schematic-Base Case
Cooper Nuclear Station
Nebraska Public Power District



Note: Laundry wastes are discarded after filtration.



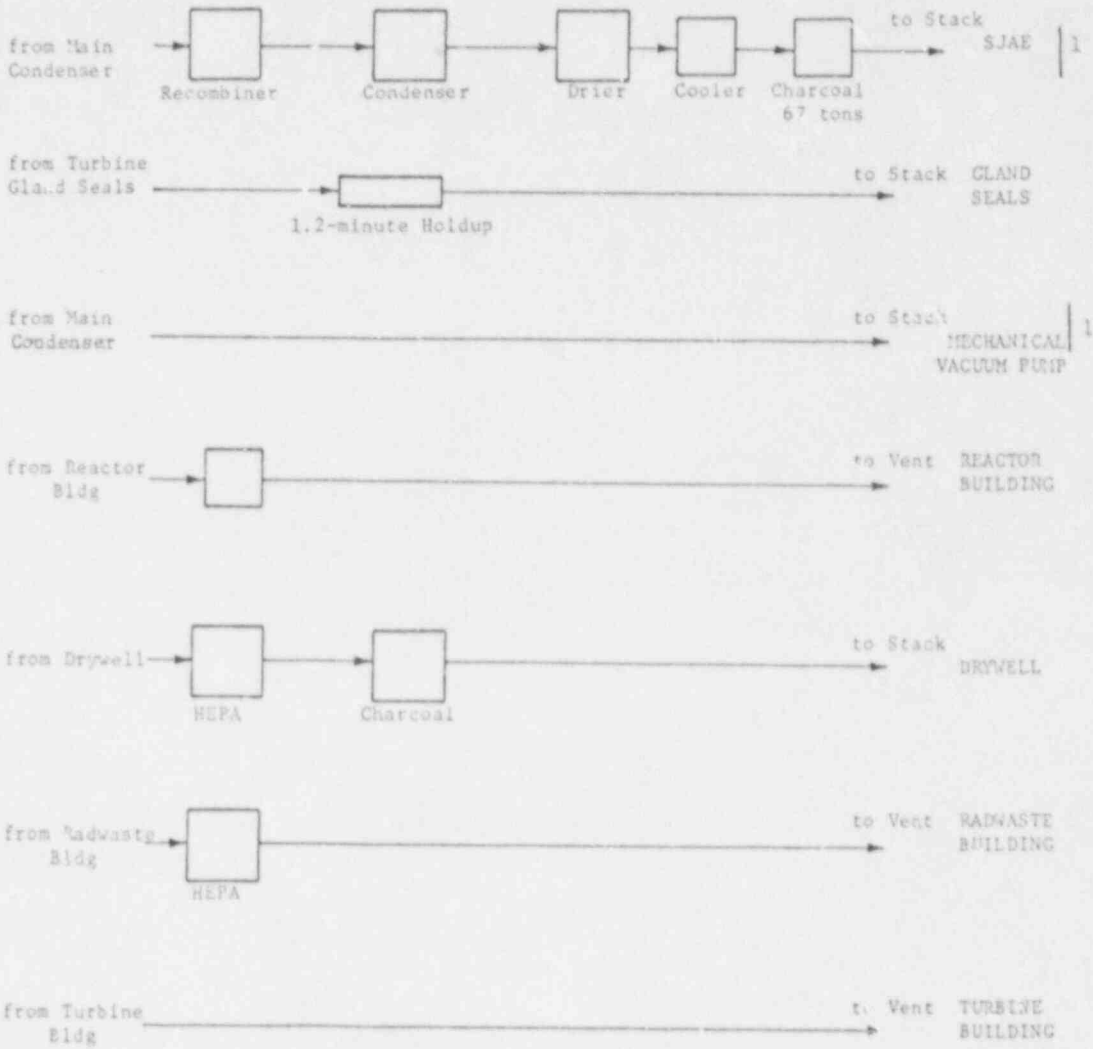
Revision 1
1/78

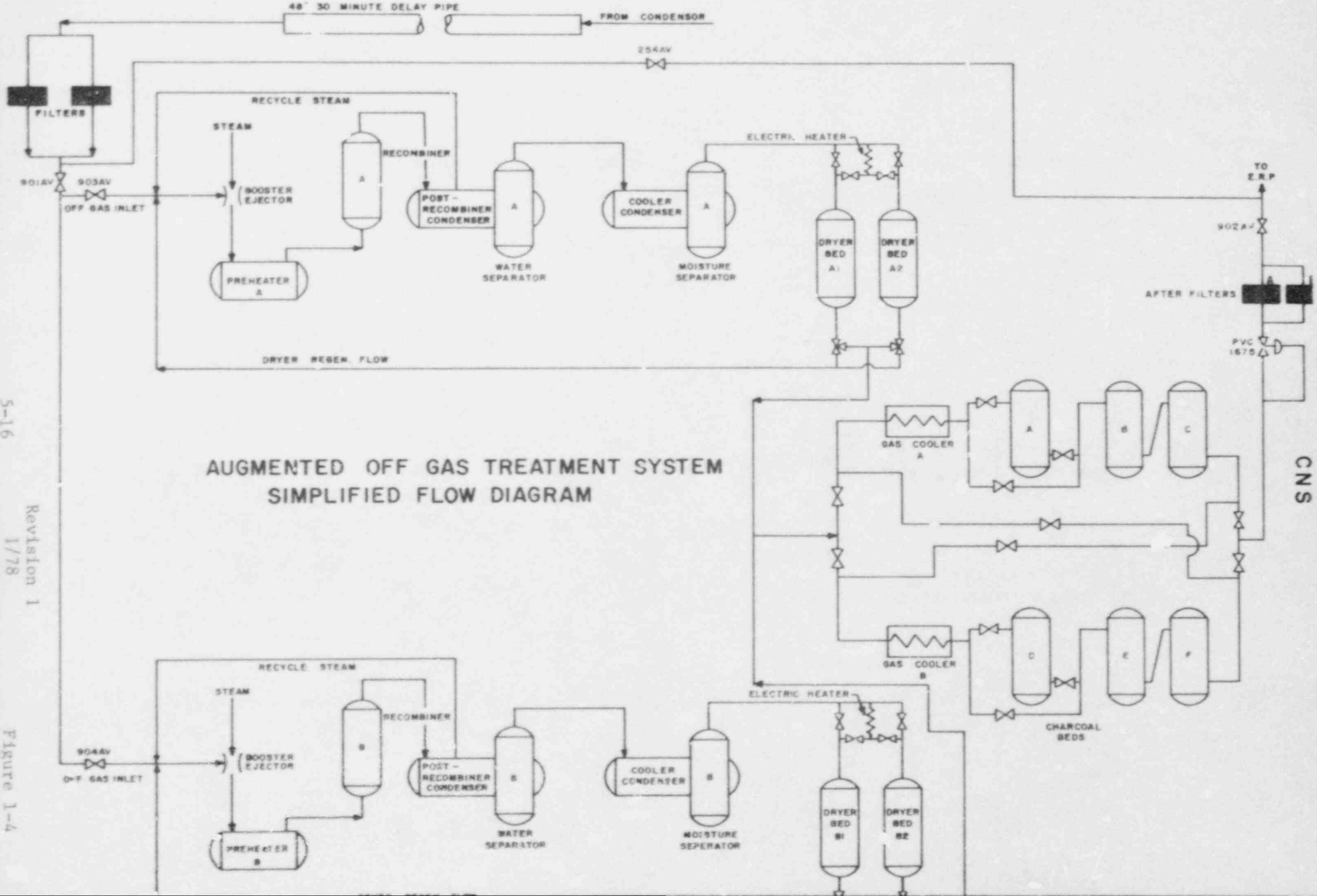
Figure 1-2

AUGMENTED LIQUID TREATMENT SYSTEM

Figure 1-3

Gaseous Waste Schematic-Base Case
Cooper Nuclear Station
Nebraska Public Power Station





5-16

Revision 1
1/78

Figure 1-4

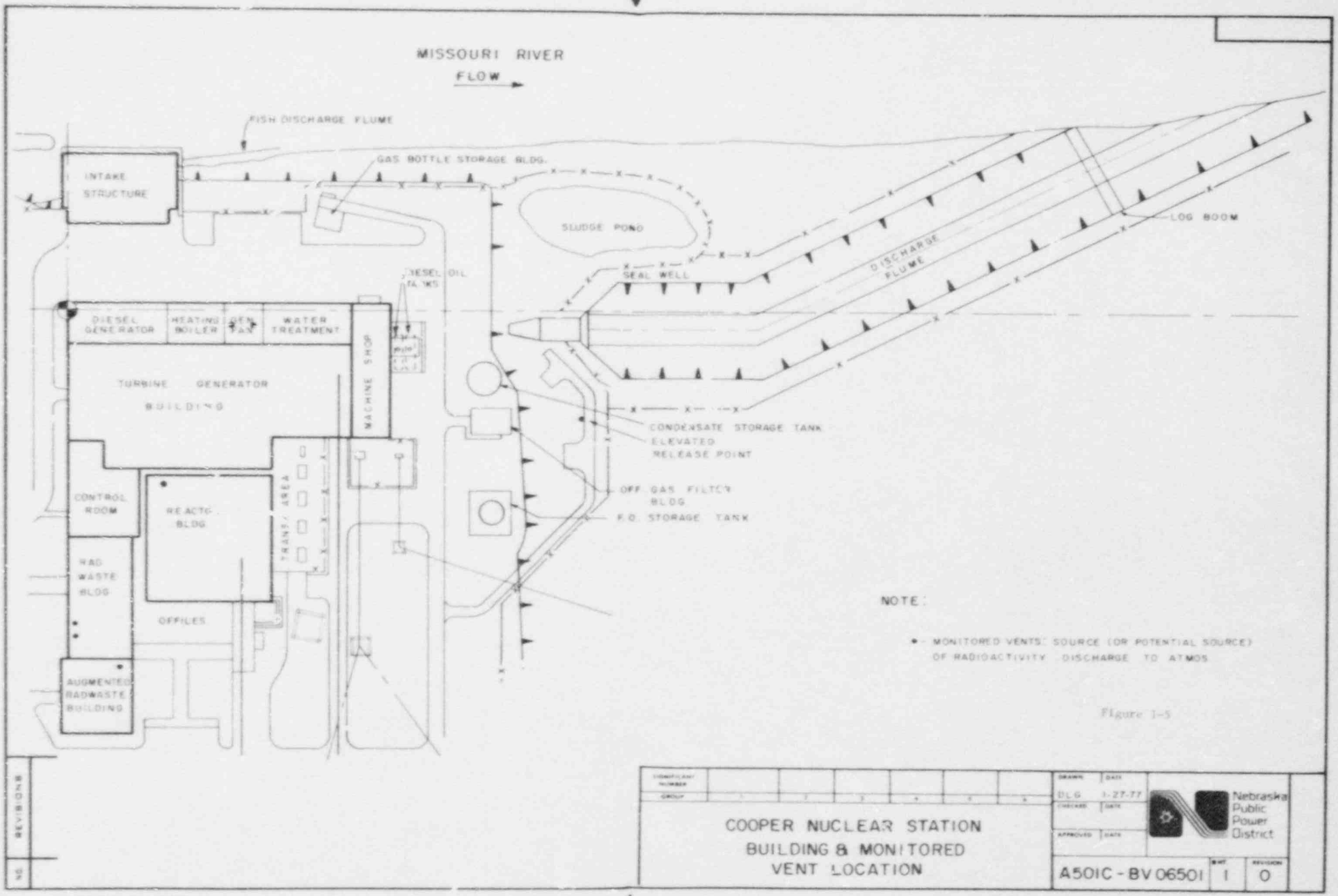

MISSOURI RIVER
FLOW
FISH DISCHARGE FLUME
GAS BOTTLE STORAGE BLDG.
INTAKE STRUCTURE
SLUDGE POND
LOG BOOM
SEAL WELL
DISCHARGE FLUME
DIESEL OIL TANKS
DIESEL GENERATOR
HEATING BOILER
GEN. FAN
WATER TREATMENT
MACHINE SHOP
TURBINE GENERATOR BUILDING
CONDENSATE STORAGE TANK
ELEVATED RELEASE POINT
OFF GAS FILTER BLDG
F.O. STORAGE TANK
CONTROL ROOM
REACTR. BLDG.
TRANSF. AREA
RAD WASTE BLDG
OFFILES
AUGMENTED RADWASTE BUILDING
NOTE:
• - MONITORED VENTS: SOURCE (OR POTENTIAL SOURCE) OF RADIOACTIVITY DISCHARGE TO ATMOS
REVISIONS
NO.
SIGNIFICANT NUMBER
GROUP
DRAWN DLG DATE 1-27-77
CHECKED DATE
APPROVED DATE
COOPER NUCLEAR STATION
BUILDING & MONITORED VENT LOCATION
Nebraska Public Power District
A501C-BV06501
SHT. 1
REVISION 0

Figure 1-5

TABLE 1-3

ATMOSPHERIC GASEOUS RELEASE POINTS
COOPER NUCLEAR GENERATING STATION
NEBRASKA PUBLIC POWER DISTRICT

Building	Building Height (feet MSL)	Number of Vents and Sizes	Type of Vent	Location of Vent	Velocity
Reactor	1049'-0"	1 operating - 1 stand-by 4'-2½"X7'9"	Motor, generator, exhaust fan	Exits North side of bldg. at 976' level	70,000 CFM 15.8 ft/sec 70°F winter - 90°F summer
		1 operating - 1 stand-by 96"X48"	Exhaust fan	Exits 15' above roof of bldg. (straight-up)	73,405 CFM 38.23 ft/sec 70°F winter - 90°F summer
Turbine	1010'-7"	2 operating - 2 stand-by 48"X96"	Exhaust fan	Exits turbine bldg. east side @ 909 level - exits fan bldg. 14" above roof	101,420 CFM 23.4 ft/sec 70°F winter - 90°F summer
Radwaste	961'-10"	1 operating - 1 stand-by 102"X60"	Exhaust fan	Exits at roof at 952'-6" level (North)	40,270 CFM 42.26 ft/sec 70°F winter - 90°F summer
		1 operating - 1 stand-by 42½"X36"	Exhaust fan	Exits at roof at 952'6" level (North)	7530-10030 CFM 18.3 ft/sec 70°F winter - 90°F summer
Augmented Radwaste	944'-2" (Top of Parapet-wall)	1 operating - 1 stand-by	Exhaust fan	Exits at East side of bldg. at 930' level	16,500 CFM 50.9 ft/sec
Control Room	952'-4" (Top of Parapet-wall)	1 operating - 1 stand-by 12"X24"	Exhaust fan	Exits at South end of roof 950' level (downward)	2,200 CFM 10.9 ft/sec 70°F
		1 operating - 1 stand-by	Exhaust fan	Exits at North end of roof 950' level	15,980 CFM 14.2 ft/sec 70°F
Control Room (cont.)		1 operating 76"X24"	Exhaust fan	Exits at North end of roof 958' level	0-19,775 CFM 0-26.0 ft/sec 70°F
		1 operating 6"R	Exhaust fan	Exits 3' above South end of roof 952' level	225 CFM 15 ft/sec 70°F
		1 operating 2'X4'	Exhaust fan	Exits at North end of roof 952' level	100-5280 CFM 0.2-11 ft/sec 70°F
Elected Release Point	325'-0" Above grade	1 stack	18" X 14" Reducer at exit	Exits straight up south of plant at 1,216' level	3000 CFM 46.7 ft/sec 60°F winter - 90°F summer

TABLE 1-1

LIQUID RELEASES -- BASE CASE
(CURIES/YEAR)

ISOTOPE	RELEASE	ISOTOPE	RELEASE
H----3	3.10E+01	RU-103	4.40E-04
NA--24	4.40E-02	RU-105	2.70E-03
P---32	2.70E-03	RU-106	2.40E-03
CR--51	7.20E-02	RH103M	3.00E-04
MN--54	1.90E-03	RH105M	2.80E-03
MN--56	3.10E-02	RH-105	1.60E-03
FE--55	1.60E-02	RH-106	4.70E-05
FE--59	4.50E-04	AG110M	4.60E-04
CO--58	7.10E-03	TE129M	5.90E-04
CO--60	1.50E-02	TE-129	3.80E-04
NI--63	1.60E-05	TE131M	7.30E-04
NI--65	1.80E-04	TE-131	1.30E-04
CU--64	1.30E-01	TE-132	1.00E-04
ZN--65	3.10E-03	I--131	2.50E+00
ZN-69M	9.20E-03	I--132	2.10E-02
ZN--69	9.70E-03	I--133	9.60E-01
BR--83	2.30E-03	I--134	6.10E-03
BR--84	1.20E-04	I--135	1.50E-01
RB--89	1.90E-04	CS-134	2.90E-02
SR--89	1.50E-03	CS-136	9.90E-03
SR--90	9.50E-05	CS-137	6.00E-02
SR--91	1.40E-02	CS-138	6.10E-03
SR--92	6.70E-03	BA137M	3.40E-02
Y---90	3.80E-05	BA-139	2.00E-03
Y--91M	8.50E-03	BA-140	5.30E-03
Y---91	9.00E-04	BA-141	4.30E-05
Y---92	1.60E-02	LA-140	2.30E-03
Y---93	1.40E-02	LA-141	7.80E-04
ZR--95	1.10E-04	LA-142	1.40E-03
ZR--97	2.70E-05	CE-141	4.80E-04
NB--95	1.10E-04	CE-143	2.30E-04
NB-97M	2.60E-05	CE-144	5.20E-03
NB--97	2.80E-05	PR-143	5.50E-04
NB--98	2.80E-04	PR-144	4.70E-05
MO--99	1.90E-02	ND-147	3.90E-05
TC-99M	5.40E-02	W--187	2.00E-03
TC-101	2.00E-04	NP-239	6.40E-02
TC-104	3.50E-04	OTHERS	9.54E-06

TABLE 1-2

GASEOUS RELEASES -- BASE CASE
(CURIES/YEAR)

ISOTOPE	RELEASE FROM STACK	RELEASE FROM PLANT VENT	TOTAL
H----3	1.55E+01	1.55E+01	3.10E+01
C---14	9.50E+00	0.	9.50E+00
AR--41	2.50E+01	0.	2.50E+01
CR--51	3.00E-06	1.31E-02	1.31E-02
MN--54	3.00E-05	9.30E-04	9.60E-04
FE--59	4.00E-06	6.54E-04	6.58E-04
CO--58	6.00E-06	6.51E-04	6.57E-04
CO--60	1.00E-04	3.00E-03	3.10E-03
ZN--65	2.00E-05	2.35E-04	2.55E-04
KR-83M	3.60E+01	0.	3.60E+01
KR-85M	6.50E+01	7.10E+01	1.36E+02
KR--85	2.00E+02	0.	2.00E+02
KR--87	2.13E+02	1.33E+02	3.46E+02
KR--88	2.13E+02	2.33E+02	4.46E+02
KR--89	1.00E+03	0.	1.00E+03
SR--89	9.00E-07	6.01E-03	6.01E-03
SR--90	5.00E-08	2.31E-05	2.31E-05
ZR--95	4.00E-06	1.05E-04	1.09E-04
SB-124	2.00E-06	3.03E-04	3.05E-04
XE133M	3.00E+00	0.	3.00E+00
XE-133	1.51E+02	2.63E+03	2.78E+03
XE135M	7.20E+01	6.96E+02	7.68E+02
XE-135	2.64E+02	1.06E+03	1.32E+03
XE-137	1.20E+03	0.	1.20E+03
XE-138	8.77E+02	1.41E+03	2.28E+03
I--131	5.10E-02	4.40E-01	4.91E-01
I--133	1.98E-01	1.62E+00	1.82E+00
CS-134	4.00E-05	3.88E-04	4.28E-04
CS-136	3.00E-06	5.95E-05	6.25E-05
CS-137	5.50E-05	7.55E-04	8.10E-04
BA-140	4.00E-06	1.10E-02	1.10E-02
CE-141	1.00E-06	6.27E-04	6.28E-04

Item 2. Provide, in tabular form, the distances from the centerline of the first nuclear unit to the following for each of the 22-1/2 degree radial sectors centered on the 16 cardinal compass directions.

a) nearest milk cow (to a distance of 5 miles)

b) nearest meat animal (to a distance of 5 miles)

c) nearest milk goat (to a distance of 5 miles)

d) nearest residence (to a distance of 5 miles)

e) nearest vegetable garden greater than 500 ft^2 (to a distance of 5 miles)

f) nearest site boundary

For radioactivity releases from stacks which qualify as elevated releases as defined in Draft Regulatory Guide 1.DD, identify the locations of all milk cows, milk goats, meat animals, residences, and vegetable gardens, in a similar manner, out to a distance of 3 miles for each radial sector.

Response - Tables 2.1 and 2.2 provide the above information.

TABLE 2.1

SUMMARY OF CRITICAL DISTANCES (MILES)*
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

Sector	Site Boundary	Nearest Milk Cow	Nearest Milk Goat	Nearest Meat Animal	Nearest Resident	Nearest Garden
NNE	0.65	-	-	2.4	1.8	1.8
NE	0.63	3.4	-	3.4	2.4	2.4
ENE	0.57	4.0	-	4.0	2.5	2.5
E	0.54	-	-	1.9	1.7	1.7
ESE	0.54	-	-	2.4	1.9	1.9
SE	0.64	-	-	-	2.2	-
SSE	0.84	-	-	3.5	3.5	-
S	0.82	-	-	4.4	4.4	4.4
SSW	0.84	-	-	3.7	3.7	3.7
SW	0.98	-	2.6	1.5	1.6	1.5
WSW	1.00	-	-	1.4	1.4	1.4
W	0.99	3.5	-	1.1	1.1	1.1
WNW	1.01	-	-	1.9	1.9	1.9
NW	0.81	3.7	-	1.2	1.1	1.2
NNW	0.71	-	-	2.0	1.8	1.8
N	0.71	-	-	4.3	2.8	3.5

* Distances up to 5 miles from release point.

TABLE 2.2

SUMMARY OF DESIGNATED ITEMS WITHIN 22½° RADIAL SECTORS
CENTERED ON THE 16 CARDINAL COMPASS DIRECTIONS
FOR A 3-MILE RADIUS AROUND COOPER NUCLEAR STATION

Sect	Nearest Site Boundary (Miles)	Location (Miles from ERP)	Milk Cows	Milk Goats	Meat Animals			Residence	Vegetable Garden
					Beef	Hogs	Chickens		
N	0.71	2.8	0	0	0	0	0	X	0
		3.1	0	0	0	0	0	X	0
NNE	0.76	1.8	0	0	0	0	0	X	X
		2.4	0	0	X	0	0	X	0
		3.0	0	0	X	0	0	X	X
NE	0.67	2.4	0	0	0	0	0	X	X
		3.1	0	0	0	0	0	X	X
ENE	0.58	2.5	0	0	0	0	0	X	X
E	0.70	1.7	0	0	0	0	0	X	X
		1.9	0	0	0	0	0	X	X
		1.9	0	0	X	0	0	X	X
		2.3	0	0	X	0	X	X	X
ESE	0.57	1.9	0	0	0	0	0	X	X
		2.2	0	0	0	0	0	X	X
		2.4	0	0	0	X	0	X	X
		2.7	0	0	X	X	0	X	X
SE	0.95	2.2	0	0	0	0	0	X	0
		3.0	0	0	0	0	0	X	0
SSE	0.89	None of the items present within the 3-mile radius.							
S	0.83	None of the items present within the 3-mile radius.							

TABLE 2.2 (Cont.)

Sect	Nearest Site Boundary (Miles)	Location (Miles from ERP)	Milk Cows	Milk Goats	Meat Animals Beef	Meat Animals Hogs	Meat Animals Chickens	Residence	Vegetable Garden
SSW	0.89	None of the items present within the 3-mile radius.							
SW	1.17	1.5	0	0	0	0	X	X	X
		1.6	0	0	X	X	0	X	X
		1.9[1)]	0	0	0	X	0	X	0
		2.1[2)]	0	0	X	0	0	X	X
		2.6	0	X	X	X	0	X	X
WSW	0.89	1.4	0	0	X	0	0	X	X
		1.5	0	0	X	0	0	0	0
		2.0	0	0	0	0	0	X	X
		2.2	0	0	X	0	0	0	0
		2.3	0	0	X	0	0	X	X
		2.6	0	0	0	0	0	X	X
		2.6	0	0	0	0	0	X	X
		2.7	0	0	0	0	0	X	X
		3.0	0	0	X	0	0	X	X
W	0.78	1.1	0	0	0	0	X	X	X
		1.9	0	0	X	0	0	X	X
		2.4	0	0	X	0	0	X	X
WNW	0.81	1.5	0	0	X	X	0	X	X
		2.5	0	0	X	X	0	X	X
		2.7	0	0	0	0	0	X	X
		2.8	0	0	X	X	0	X	0
		2.9	0	0	X	0	0	X	X
NW	0.96	1.1	0	0	0	0	0	X	0
		1.2	0	0	X	X	0	X	X
		2.1	0	0	0	X	0	X	X
		2.5	0	0	0	0	0	X	0

TABLE 2.2 (Cont.)

Sect	Nearest Site Boundary (Miles)	Location (Miles from ERP)	Milk Cows	Milk Goats	Meat Animals			Residence	Vegetable Garden
					Beef	Hogs	Chickens		
		2.7	0	0	X	X	0	X	X
		2.9	0	0	X	0	0	X	X
		3.0	0	0	0	0	0	X	X
NNW	0.73	1.8	0	0	0	0	0	X	X
		2.0	0	0	0	X	0	X	X
		2.6[3]	0	0	0	0	0	X	X

Definition of Terms: X - Item present at the radial distance indicated from the ERP.

0 - Item not present at the radial distance indicated from the ERP.

1) Sheep also present.

2) Town of Nemaha, Nebraska. ∿ 87 residences and 40 vegetable gardens.

3) Town of Brownville, Nebraska. ∿ 67 residences and 30 vegetable gardens.

Item 3. Based on considerations in Draft Regulatory Guide 1.DD, provide estimates of relative concentration (X/Q) and deposition (D/Q) at locations specified in response to Item 2 above for each release point specified in response to Item 1 above.

Response - This information is given in Tables 3.2.1 through 3.2.12 of Chapter 1. The Elevated Release Point was considered an elevated release. All other releases were considered ground level, including the releases from the Turbine, Radwaste, Augmented Radwaste and Reactor buildings. 1

Item 4. Provide a detailed description of the meteorological data, models and parameters used to determine the X/Q and D/Q values. Include information concerning the validity and accuracy of the models and assumptions for your site and representativeness of the meteorological data used.

Response - The meteorological data used in determining the X/Q and D/Q values were those taken on site from July 1, 1976 to June 30, 1977. A description of the models and parameters are given in Chapter 1 of this document. 1

Item 5. If an onsite program commensurate with the recommendations and intent of Regulatory Guide 1.23 exists:

a) Provide representative annual and monthly, if available, joint frequency distributations of wind speed and direction by atmospheric stability class covering at least the most recent one year period of record, preferably two or more years of record. Wind speed and direction should be measured at levels applicable to release point elevations and stability should be determined from the vertical temperature gradient between measurement levels that represent conditions into which the effluent is released.

b) Describe the representativeness of the available data with respect to expected long-term conditions at the site.

Response a) - The monthly joint frequency distributions for the 96.93-meter wind level are given in Tables 5.1 through 5.104 in the Appendix to Chapter 5. The same 1
distribution for the 10.67-meter wind level are given in Tables 5.105 through 5.208. The tables contain summaries of the data set that was used for input to the Puff model. By necessity the data set could not contain any invalid data; therefore, data was substituted whenever invalids occurred.

Response b)- Wind speed and direction measured on-site during the period July 1, 1976 through June 30, 1977 were compared with the 1941-1970 standard climatological normals for the National Weather Service observation station at Eppley Airfield, Omaha, Nebraska-located approximately 65 miles north-northwest of the Cooper Nuclear Station. The results are as follows:

	Eppley Airfield Omaha, Nebraska	Cooper Nuclear Station	
Measurement level	Approximately 10 meters	10.67 meters	96.93 meters
Mean Wind Speed (MPS)	3.3	4.4	6.1
Predominant Wind Direction	SSE	S	S

These results indicate that the on-site data are reasonably representative of the long-term regional meteorological conditions. 1

Item 6. If recent onsite meteorological data are not available, or if the meteorological measurements program does not meet the recommendations and intent of Regulatory Guide 1.23:

a) Provide the best available meteorological data in the format described in Item 5.a above.

b) Describe the representativeness of the available data with respect to onsite and near site atmospheric transport and diffusion conditions, and with respect to expected long term conditions at and near the site.

c) Provide a description of the meteorological measurements used for collection of the data presented. This description should include the location of the sensors with respect to the power plant(s) and other prominent topographic features (including buildings) and accuracy of the instrumentation.

d) Provide a commitment to establish a program to meet the recommendations and intent of Regulatory Guide 1.23, or provide sufficient justification to allow the present program to remain unchanged.

Response - Item 6 is not applicable as recent on-site meteorological data have been used in this Enclosure.

Because of the wide and shallow valley near Cooper Station and the rolling terrain, Dames & Moore used the straight line open terrain model to estimate relative concentrations. Each of the 16 cardinal wind directions will be discussed in relation to air flow trajectories that might cause some deviations in the flow. In the discussion below, grade level is 891 feet and wind direction as the direction from which the wind blows and the cross section in Item 8 of Enclosure 2 are given as directions toward which the plume travels from the reactor building. The directions are 180 degrees apart.

North

A north wind would carry the atmospheric effluent south across the river over land and across the river again. The river makes a horseshoe bend just south of Cooper. Approximately 4 miles to the south, the valley wall extends to 150 feet. A plume would be expected to flow straight to the point where some of the remaining low level effluent may veer and flow to the southeast along the valley wall. When the river water is much warmer than the air, thermal turbulence may be set up causing enhanced dispersion of the plant plume as it flows across the river.

North-Northeast

A wind from the north-northeast will carry the plant plume over somewhat the same type of trajectory as that for a north wind with unobstructed flow to slightly over 2 miles. At this point the terrain rises to about 110 feet. The air flow would again carry the low level portion of the plume along the valley wall in an east-southeast direction. Again the passage over the river may cause added turbulence during periods when the water is much warmer than the air.

Northeast

A wind from the northeast would carry the plant plume along and over the river for over 1 mile of unobstructed flow. The Little Nemaha River valley just below this point may cause some of the low level portions of the plume to flow toward the west-northwest or along Iwers Creek toward the southwest although some of the plume may split and flow southwest along the Missouri River and again a warmer river may enhance turbulence and thus dispersion of the plume.

East-Northeast

An east-northeast wind would carry the plant plume over Nemaha unobstructed to about 1 mile where the hills rise to approximately 120 feet. Some deviation of the flow may cause flow up the Little Nemaha River valley toward the west-northwest. The Missouri River has little effect on the plume in this direction.

East

An east wind will carry the plume away from the river to the hills to the west that rise to about 150 feet. Little channeling would be expected, but the lower part of the plume may flow over the hills and on toward the west.

East-Southeast

The flow of the plume resulting from an east-southeast wind would be carried away from the river toward the valley rim over 1 mile away. Hills to 175 feet occur at about 2 miles from the plant. Some channeling to the north may occur, but most of the low level portion of the plume would be expected to rise over the valley rim.

Southeast

The plume carried by a southeast wind would travel about 1½ miles unobstructed to the valley wall of 170 feet. The lower portion of the plume may deviate toward the north, but some may flow over the valley rim.

South-Southeast

The wind from this direction will carry the plume unobstructed to about 2 miles where the valley walls rise to 170 - 180 feet. Brownville is about 2½ miles from the plant. Again some of the lower portion of the plume may be channelled to the north.

South

A south wind would carry the plume unobstructed for over 14 miles. The plume also would transverse about 3 miles over the river resulting in added turbulence during periods of warm water and cold air.

South-Southwest

A wind from this direction would carry the plume across the river unobstructed for 7 miles. At this point the terrain rises about 200 feet.

Southwest

A southwest wind will carry the plume over the river unobstructed for over 6 miles where hills of 170 feet would be encountered. Some channeling to the northwest along the valley wall may occur.

West-Southwest

A west-southwest wind will carry the plume unobstru ted over the river for 6 miles where hills to 170 feet occur. Some channeling to the northwest may occur.

West

A west wind will carry the plume unobstructed across the river to 6½ miles where hills to 200 feet occur. The plume would be expected to rise over these hills with little channeling in other directions.

West-Northwest

These winds will carry the plume across the river unobstructed for 9 miles.

Northwest

Due to the horseshoe bend in the Missouri River, a wind from the northwest will carry the plume across the river twice unobstructed for over 15 miles. As explained before, some additional turbulence may occur when the river is much warmer than the air.

North-Northwest

A wind from this direction will carry the plume unobstructed over the river twice for 5 miles where hills to 100 - 110 feet occur. Some channeling of the lower portions of the plume may occur to the southeast.

It is Dames & Moore's belief that very little, if any, recirculation of the plume will occur due to terrain at the Cooper Plant. Only the recirculation due to synoptic scale wather systems would be expected.

Item 7. Describe airflow trajectory regimes of importance in transporting effluents to the locations for which dose calculations are made.

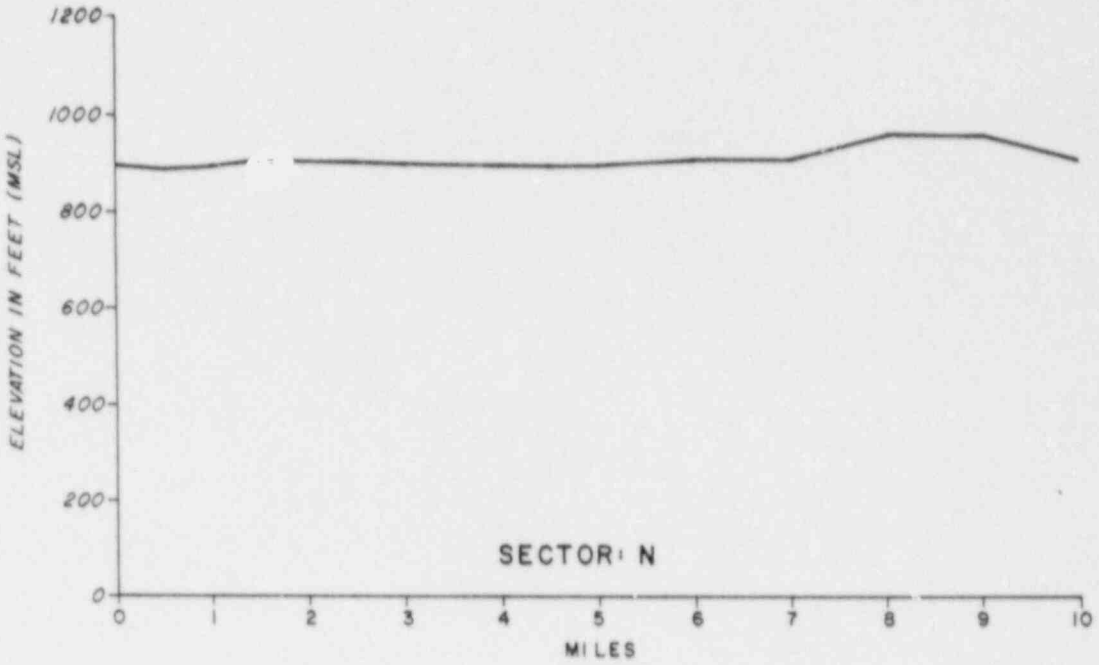
Response - The Cooper Generating Station is located in Nebraska on the west bank of the Missouri River, approximately 2 miles northeast of the town of Nemaha as shown on topographical map as Figure 8.1.

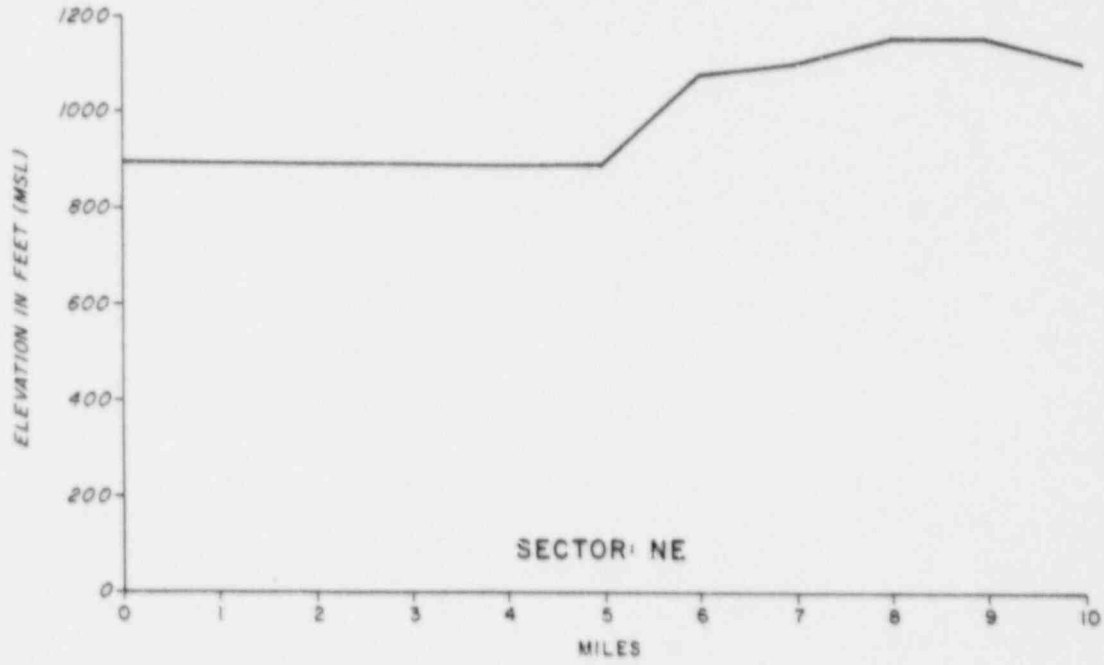
The Missouri River valley running north-northwest - south-southwest is generally quite wide within 10 miles of the plant, being 8 miles at the station but narrows to nearly 5 miles approximately 10 miles down river. Up river about 7 miles the valley narrows to about 6 miles and then widens again. The valley floor is slightly over 150 feet below the general terrain both on the Nebraska and the Missouri sides of the river, although some peaks are 275 feet above the valley floor. The reactor is about 1 mile to the east of the west valley wall which rises rather abruptly to 115 feet above the floor. Further to the northwest 1 3/4 miles hills extend to about 175 feet.

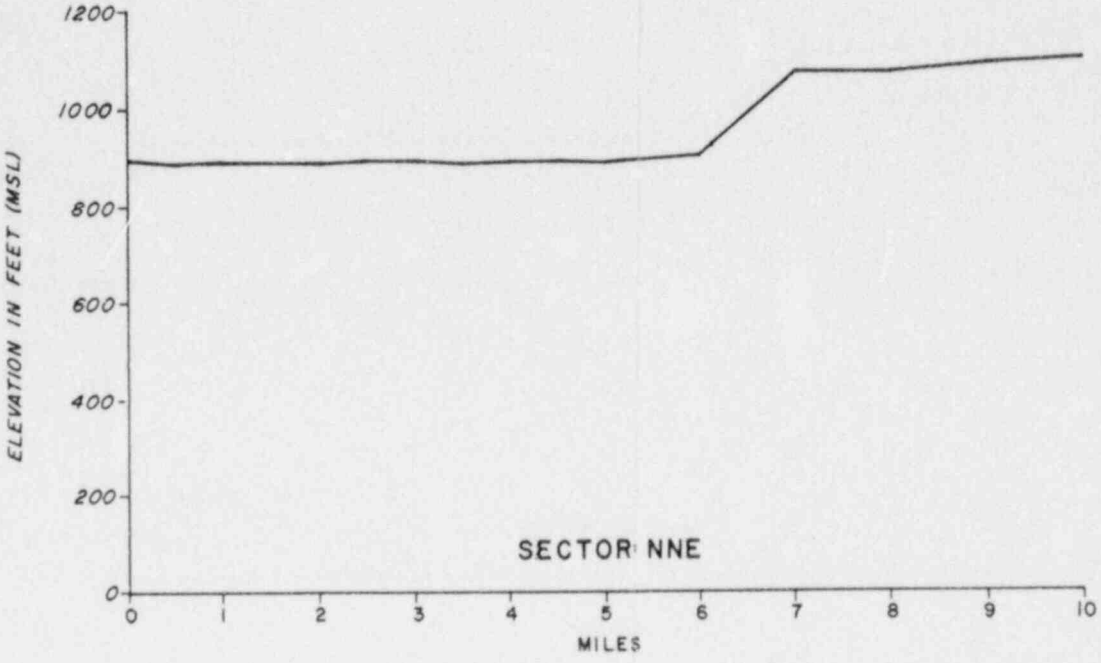
The Little Nemaha River empties into the Missouri about 3 1/4 miles down river from the station. This river valley, of course, causes a perturbation in the general terrain characteristics and some potential channeling of the station effluents. The terrain away from the river valley is gently rolling.

Item 8. Provide a map showing the detailed topographical features (as modified by the plant), on a large scale, within a 10-mile radius of the plant and a plot of the maximum topographic elevation versus distance from the center of the plant in each of the sixteen 22-1/2 degree cardinal compass point sectors (centered on true north), radiating from the center of the plant, to a distance of 10 miles.

Response - Figure 8.1 gives the topographical feature to 10-mile radius of the plant. Figure 8.2 shows the 16 plots of elevation versus distance of the plant.


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: N
0
1
2
3
4
5
6
7
8
9
10
MILES


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: NE
0
1
2
3
4
5
6
7
8
9
10
MILES



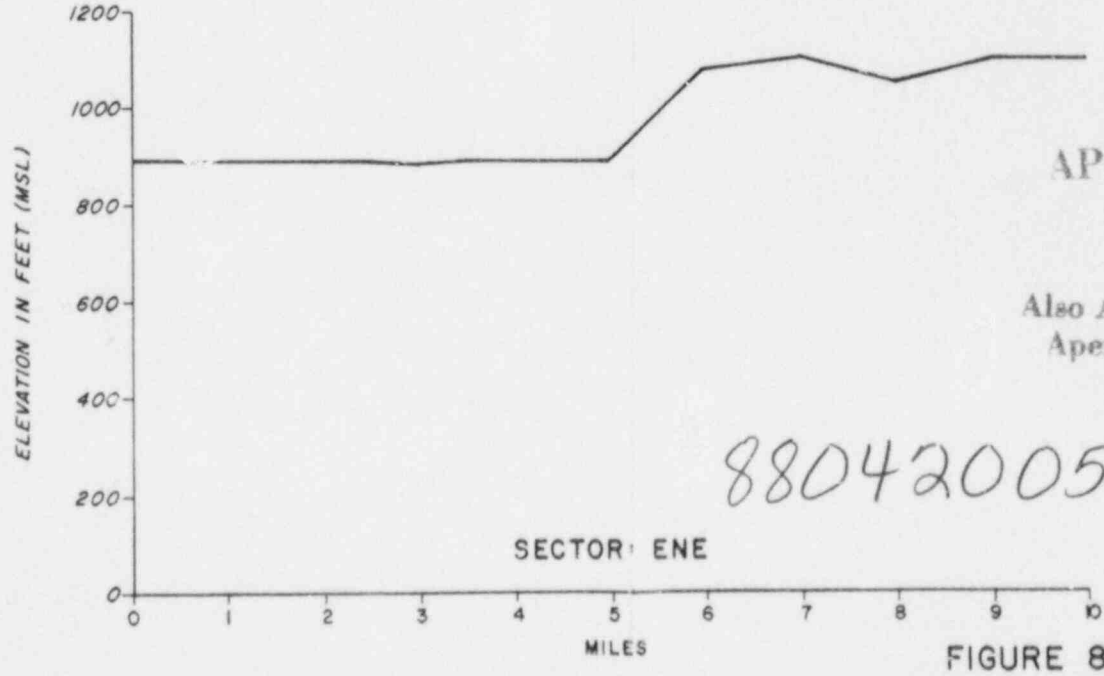
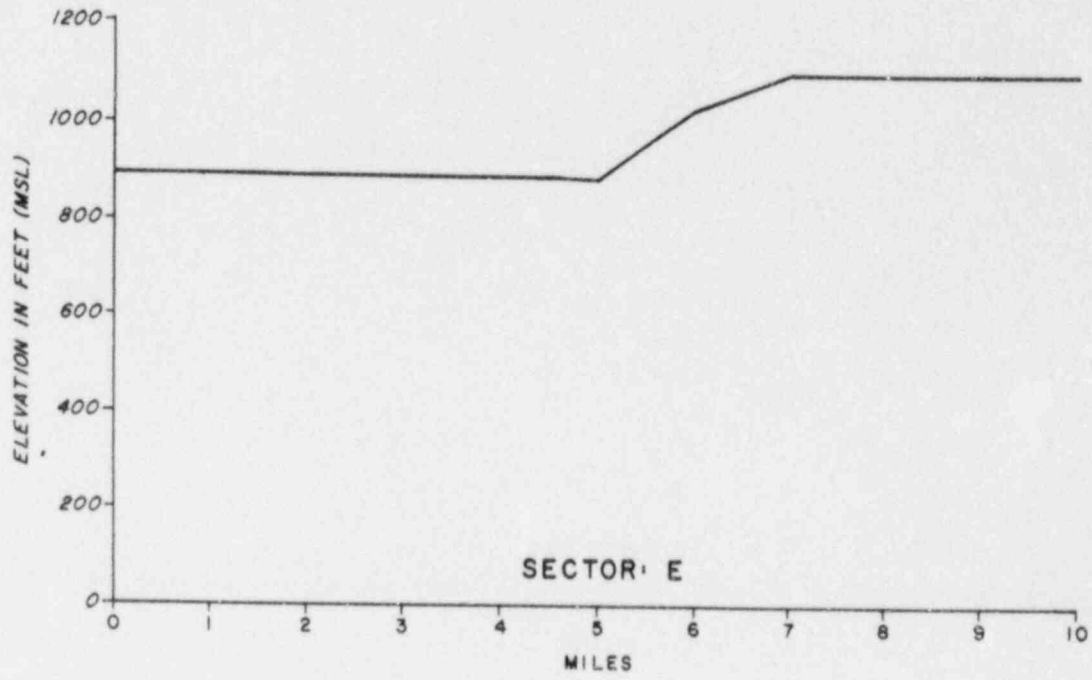
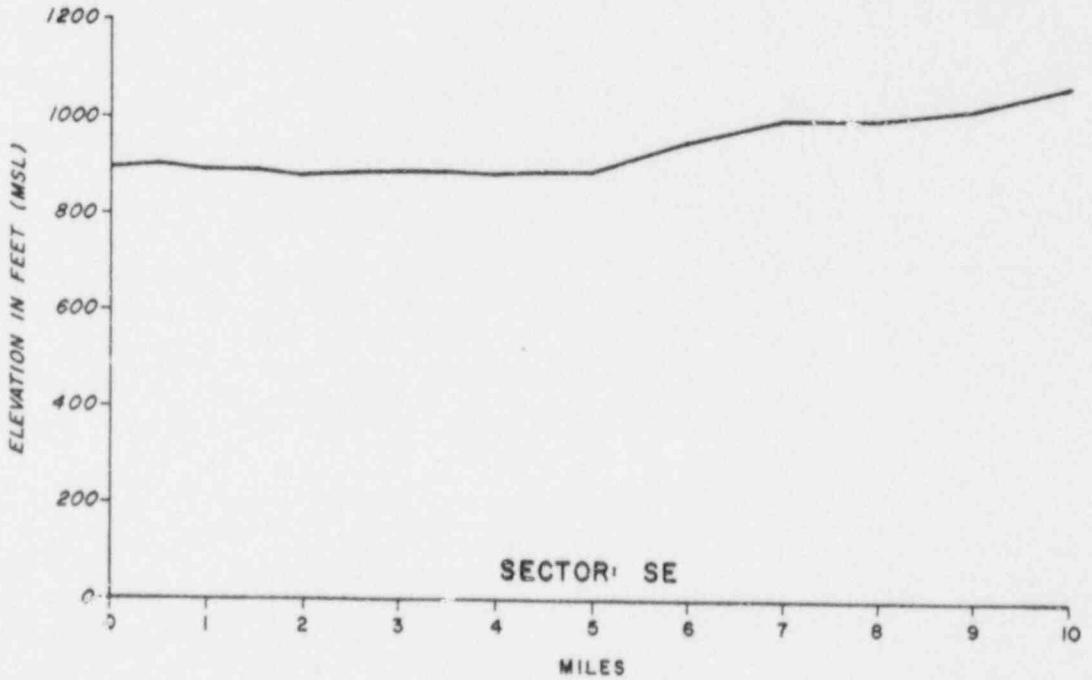
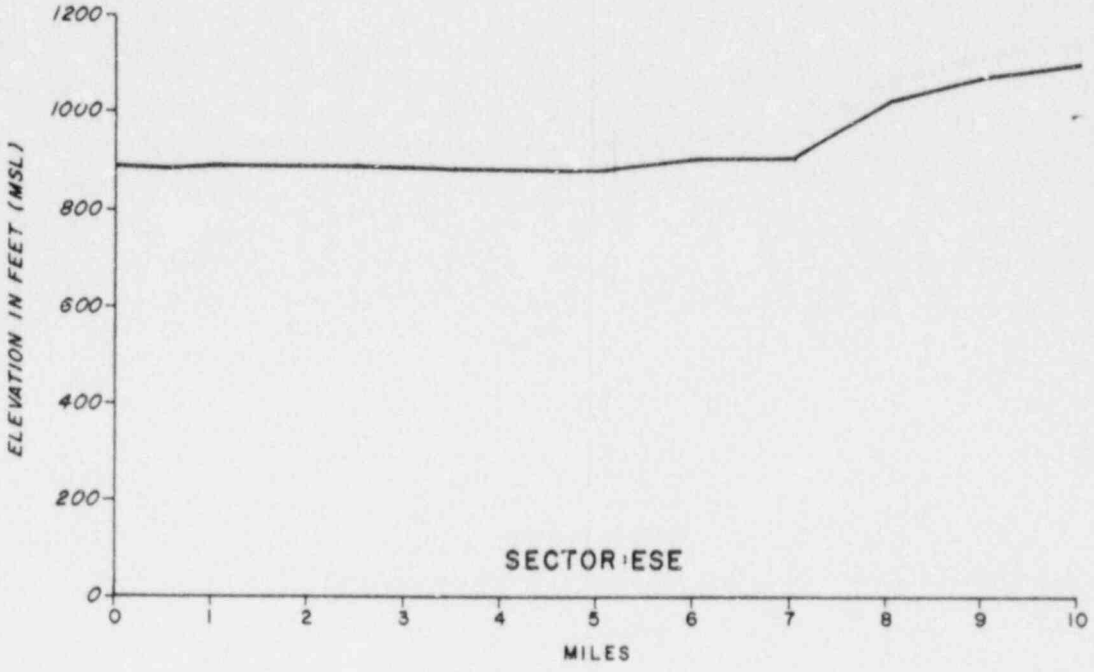


FIGURE 8-2

TOPOGRAPHICAL CROSS SECTIONS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT
SHEET 1 OF 4


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: E
0 1 2 3 4 5 6 7 8 9 10
MILES


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: SE
0 1 2 3 4 5 6 7 8 9 10
MILES



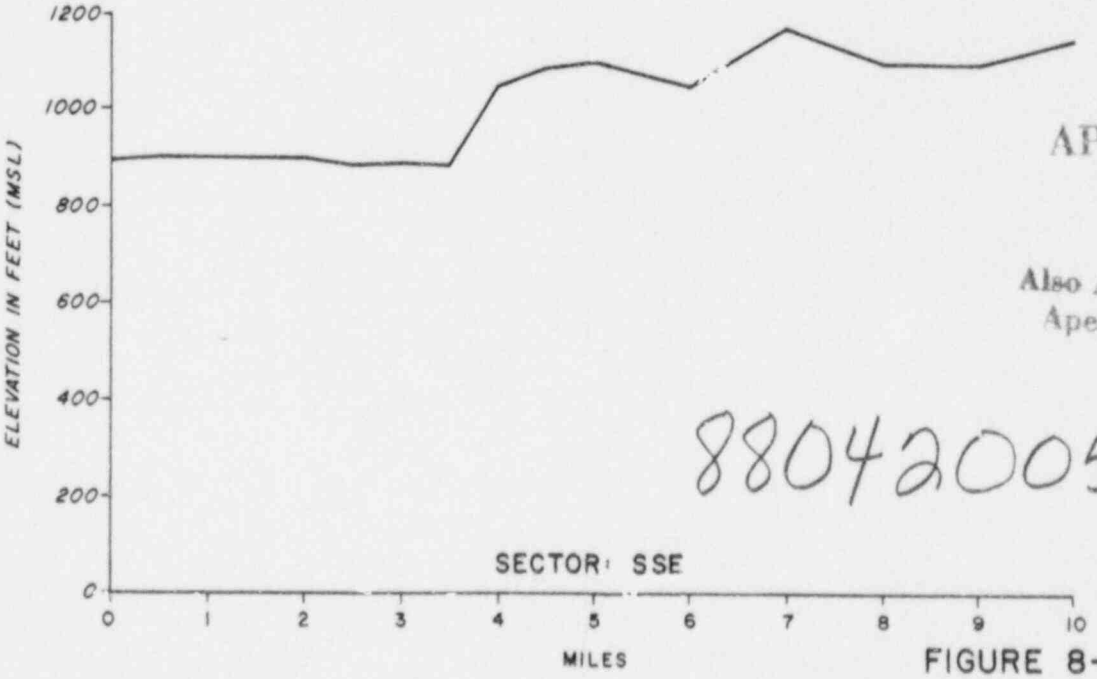
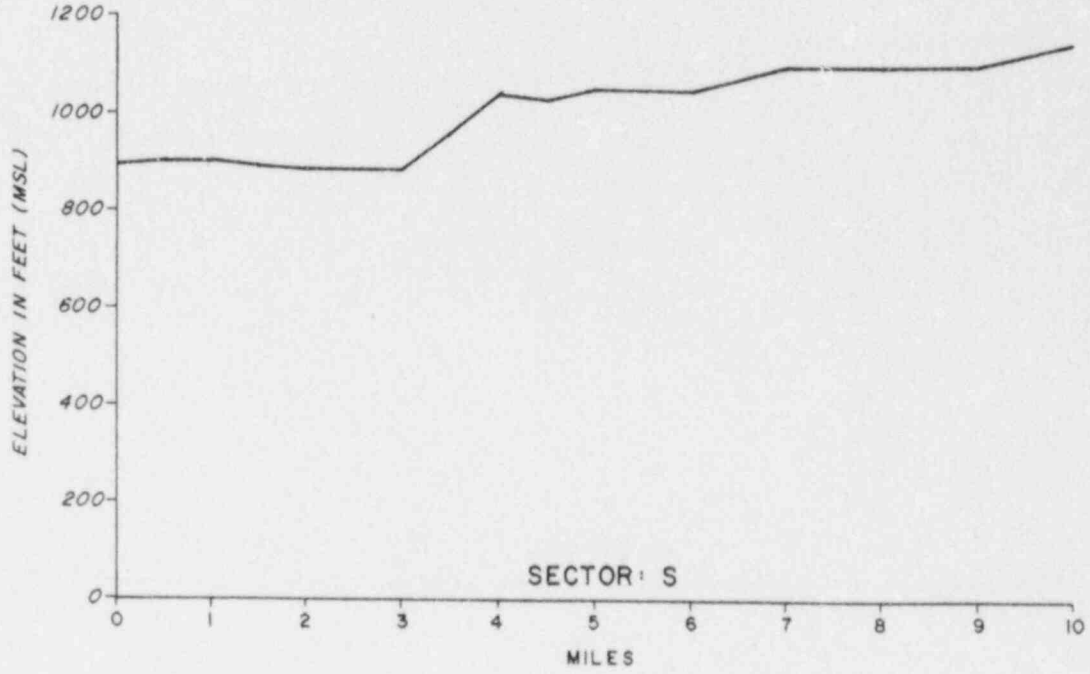
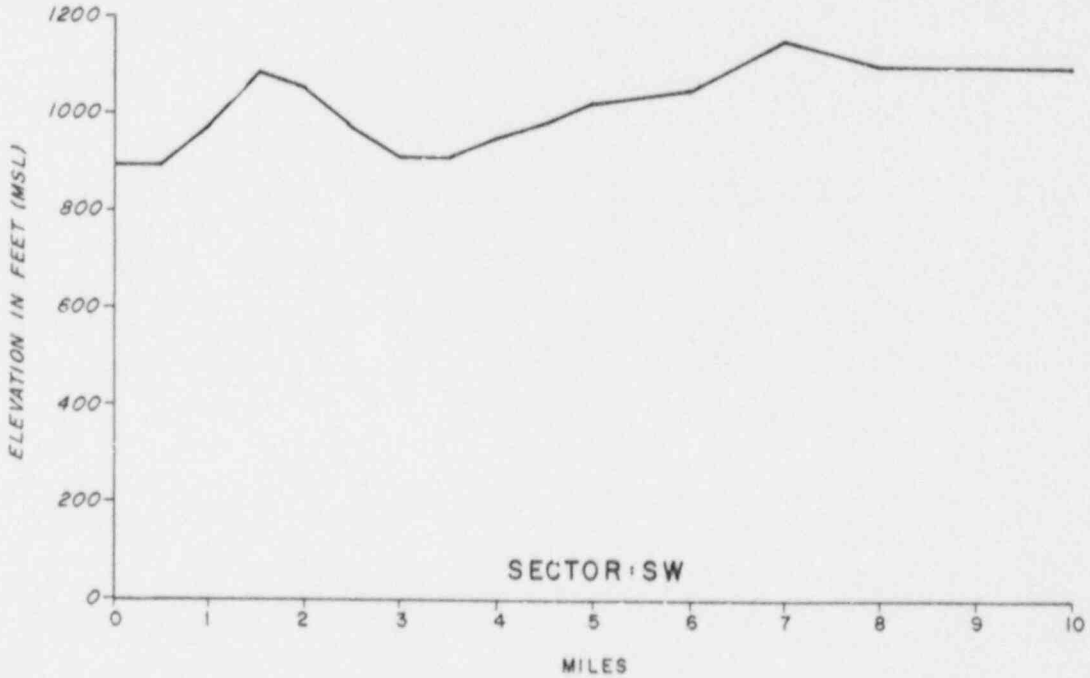


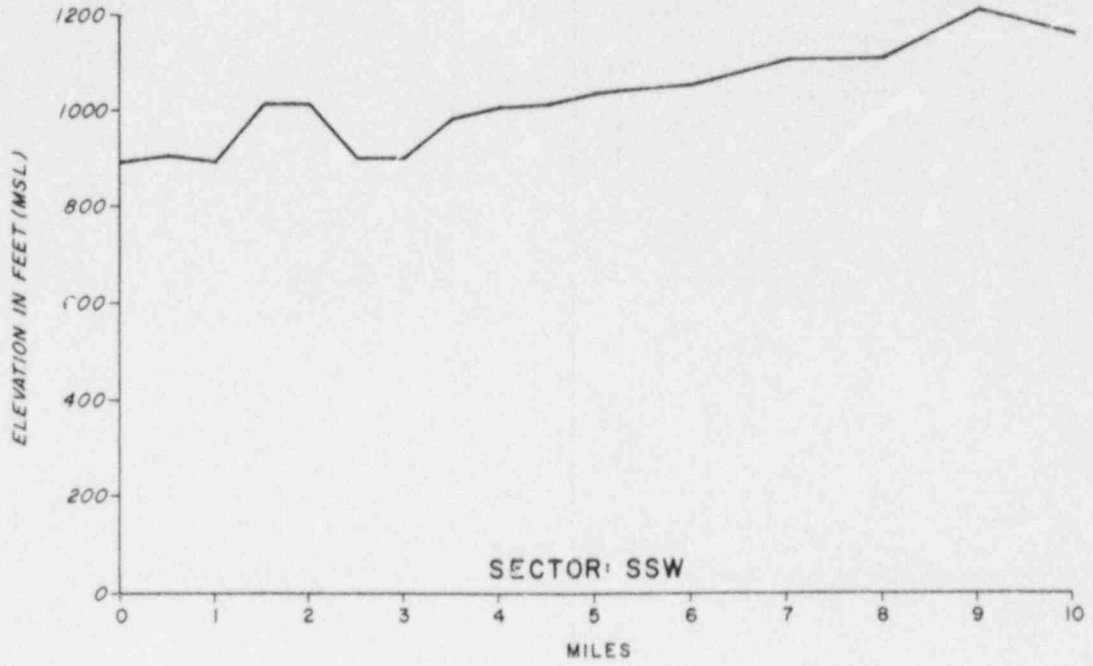
FIGURE 8-2

TOPOGRAPHICAL CROSS SECTIONS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT
SHEET 2 OF 4

DAMES & MOORE


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: S
0
1
2
3
4
5
6
7
8
9
10
MILES


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: SW
0
1
2
3
4
5
6
7
8
9
10
MILES



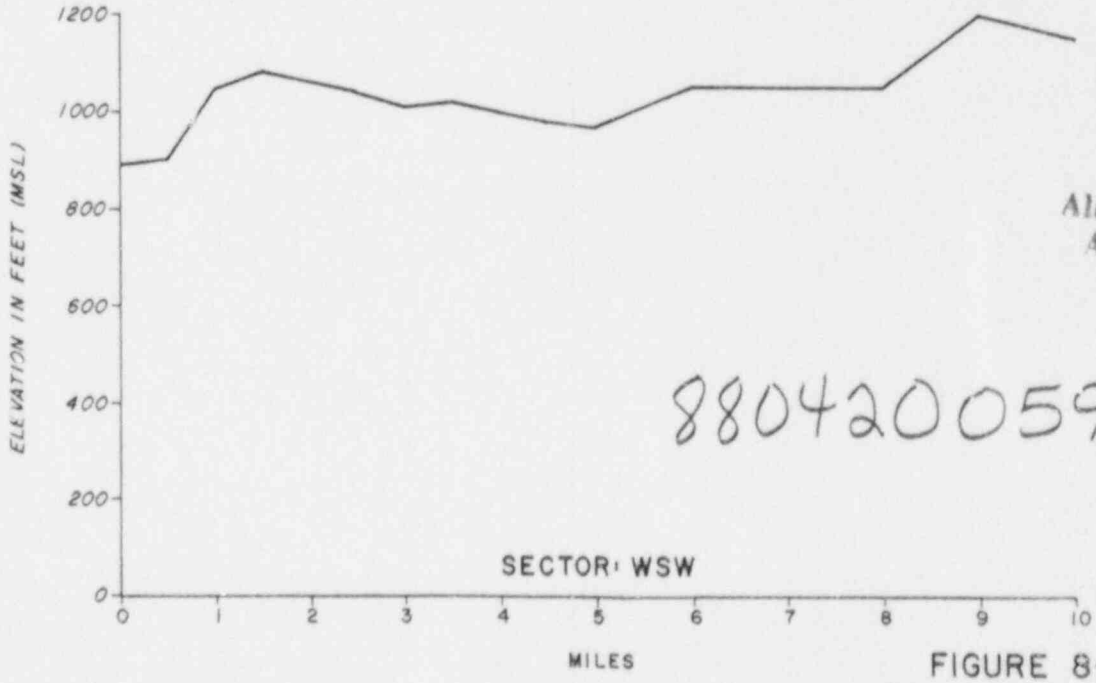
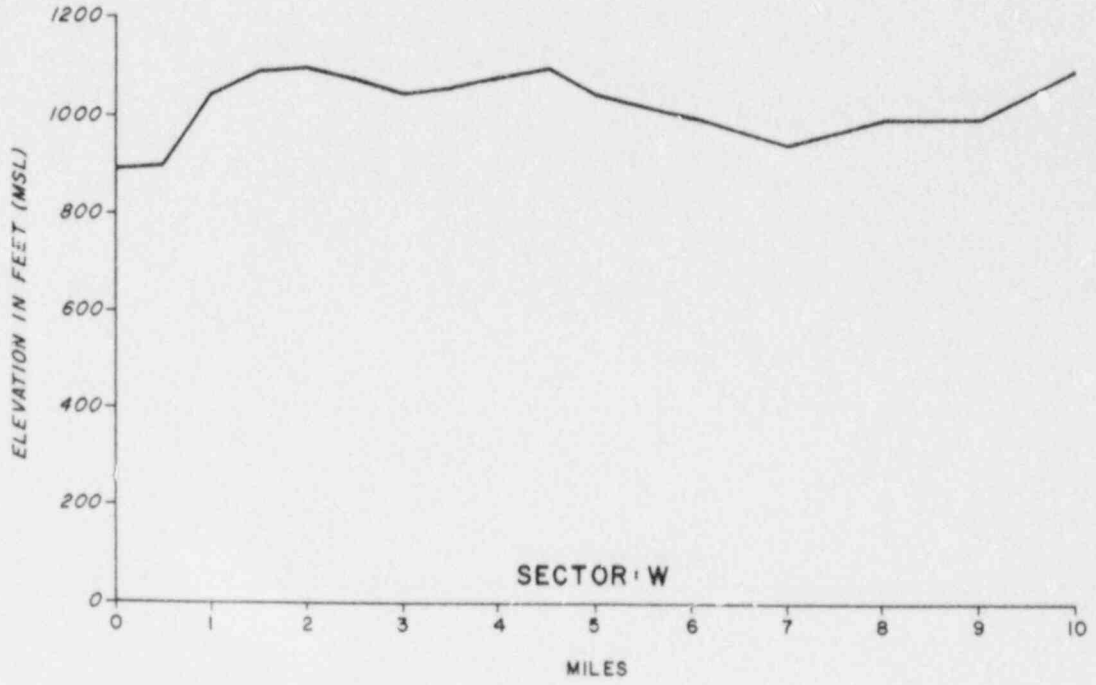
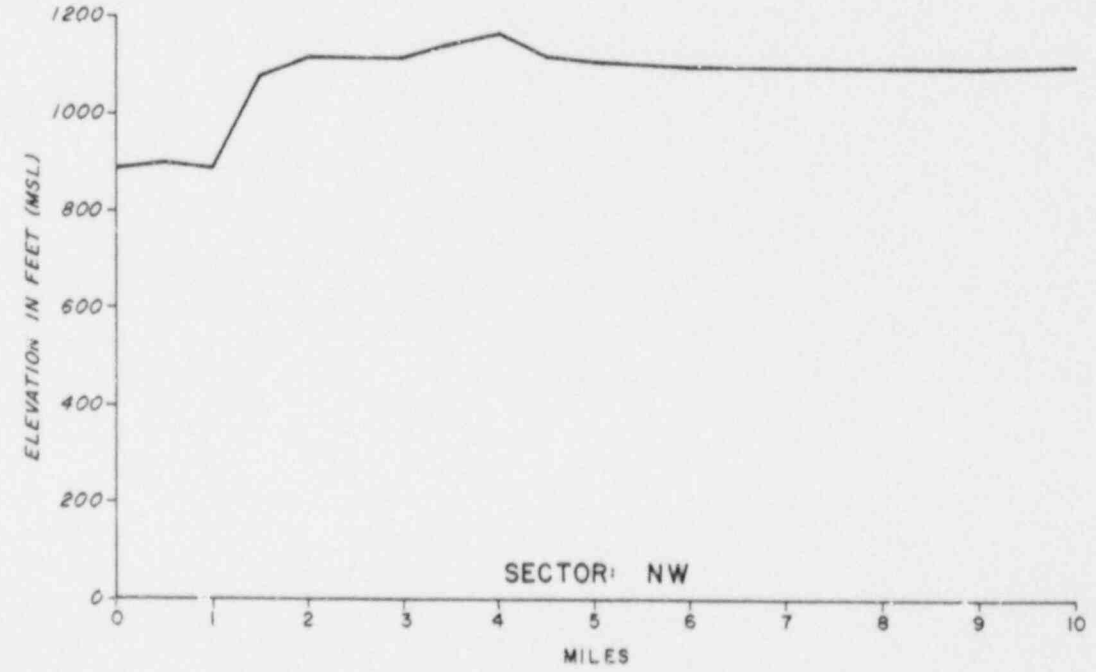


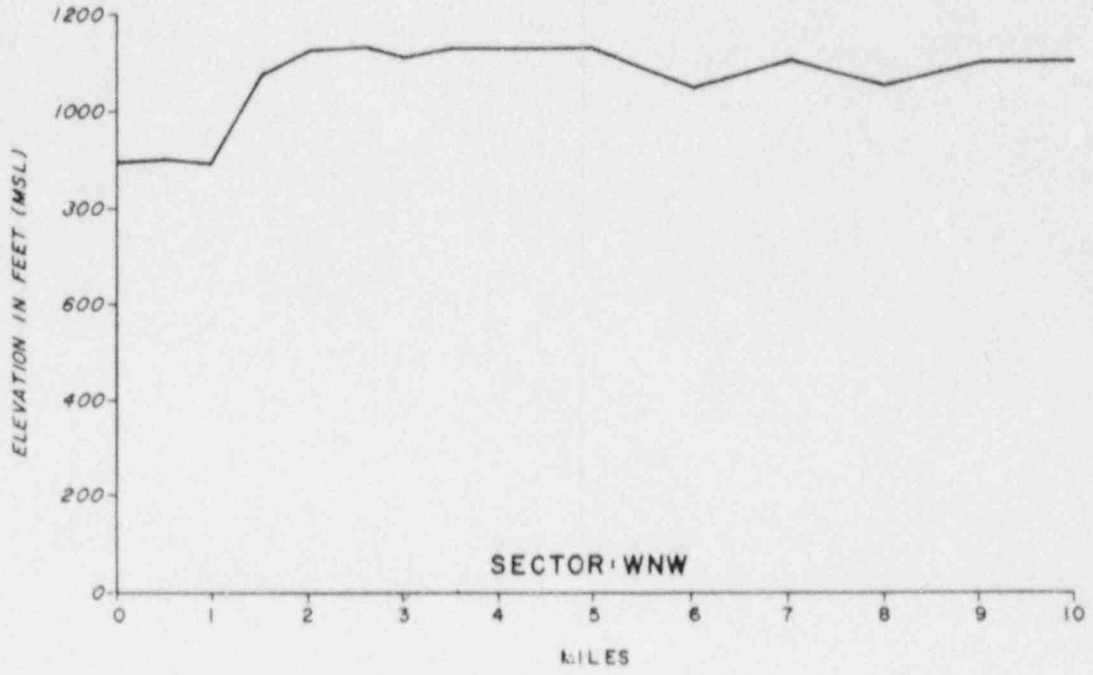
FIGURE 8-2

TOPOGRAPHICAL CROSS SECTIONS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT
SHEET 3 OF 4


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: W
0
1
2
3
4
5
6
7
8
9
10
MILES


ELEVATION IN FEET (MSL)
1200
1000
800
600
400
200
0
SECTOR: NW
0
1
2
3
4
5
6
7
8
9
10
MILES

7635-001-07



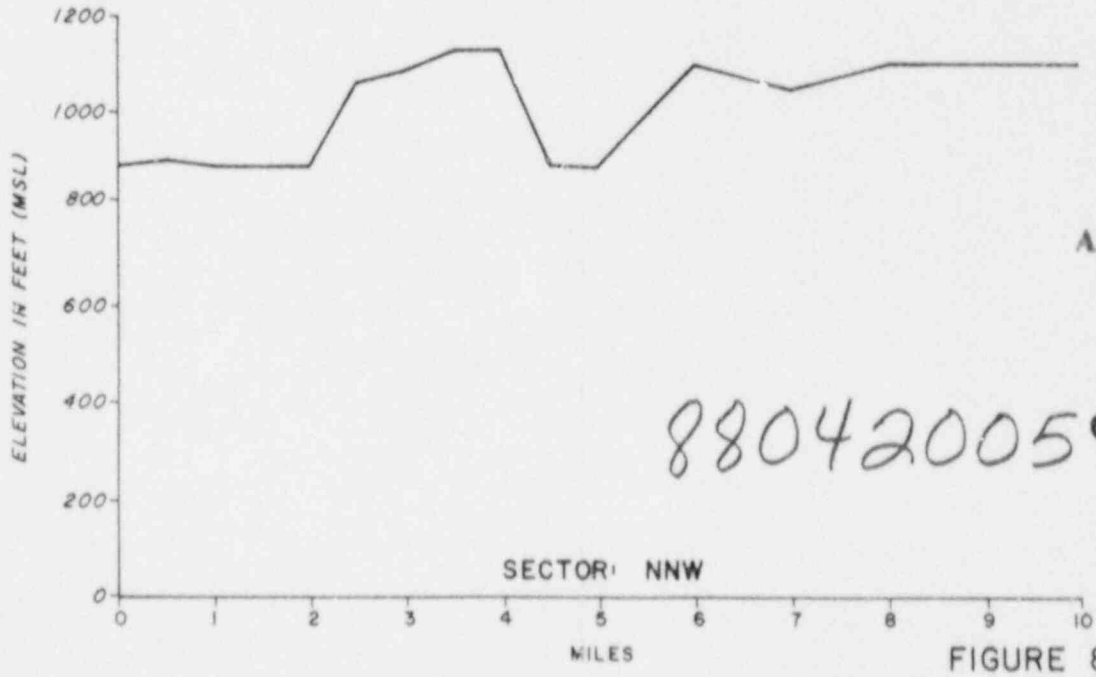


FIGURE 8-2

TOPOGRAPHICAL CROSS SECTIONS
COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT
SHEET 4 OF 4

OVERSIZE DOCUMENT PAGE PULLED

SEE APERTURE CARDS

NUMBER OF OVERSIZE PAGES FILMED ON APERTURE CARDS 1

APERTURE CARD/HARD COPY AVAILABLE FROM RECORD SERVICES BRANCH, TIDC
FTS 492-8989

Item 9. Provide the dates and times of radioactivity releases from intermittent sources by source location based on actual plant operation and, if available, appropriate hourly meteorological data (i.e., wind direction and speed, and atmospheric stability) during each period of release.

Response - This information can be found in the documents Cooper Nuclear Station Semi-Annual (and Annual) Operating Reports - Radioactive Effluents.

APPENDIX TO CHAPTER 5

ITEM 5

Joint Frequency Distribution Tables

96.93 Meter Wind Level	Tables 5.1 through 5.104
10.67 Meter Wind Level	Tables 5.105 through 5.208

TABLE 5.1

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976 TO JUNE,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	5	16	23	14	21	3	82	5.30
	.34	1.09	1.57	.96	1.43	.20	5.60	
	.06	.18	.26	.16	.24	.03	.94	
NE	4	15	17	11	2	0	49	3.41
	.27	1.02	1.16	.75	.14	0.00	3.35	
	.05	.17	.19	.13	.02	0.00	.56	
ENE	5	15	16	3	0	0	39	3.12
	.34	1.02	1.09	.20	0.00	0.00	2.66	
	.06	.17	.18	.03	0.00	0.00	.45	
E	0	13	19	6	0	0	38	3.61
	0.00	.89	1.30	.41	0.00	0.00	2.60	
	0.00	.15	.22	.07	0.00	0.00	.43	
ESE	1	11	13	9	2	1	37	4.38
	.07	.75	.89	.61	.14	.07	2.53	
	.01	.13	.15	.10	.02	.01	.42	
SE	2	16	17	24	15	3	77	5.43
	.14	1.09	1.16	1.64	1.02	.20	5.26	
	.02	.18	.19	.27	.17	.03	.88	
SSE	7	12	17	40	28	4	108	5.96
	.48	.82	1.16	2.73	1.91	.27	7.38	
	.08	.14	.19	.46	.32	.05	1.23	
S	2	13	24	49	27	22	137	6.74
	.14	.89	1.64	3.35	1.84	1.50	9.36	
	.02	.15	.27	.56	.31	.25	1.56	
SSW	4	6	13	16	12	21	72	7.32
	.27	.41	.89	1.09	.82	1.43	4.92	
	.05	.07	.15	.18	.14	.24	.82	
SW	1	4	28	23	24	12	92	7.11
	.07	.27	1.91	1.57	1.64	.82	6.28	
	.01	.05	.32	.26	.27	.14	1.05	
WSW	1	7	10	3	7	4	32	5.68
	.07	.48	.68	.20	.48	.27	2.19	
	.01	.08	.11	.03	.08	.05	.37	
W	2	9	5	3	0	0	19	3.30
	.14	.61	.34	.20	0.00	0.00	1.30	
	.02	.10	.06	.03	0.00	0.00	.22	
WNW	2	1	9	8	5	0	25	5.21
	.14	.07	.61	.55	.34	0.00	1.71	
	.02	.01	.10	.09	.06	0.00	.29	
NW	5	5	14	30	33	15	102	7.10
	.34	.34	.96	2.05	2.25	1.02	6.97	
	.06	.06	.16	.34	.38	.17	1.16	
NNW	10	13	51	75	65	44	258	6.95
	.68	.89	3.48	5.12	4.44	3.01	17.62	
	.11	.15	.58	.86	.74	.50	2.95	
N	5	29	58	68	80	55	295	6.95
	.34	1.98	3.96	4.64	5.46	3.76	20.15	
	.06	.33	.66	.78	.91	.63	3.37	
CALM	2						2	CALM
	.14						.14	
	.02						.02	
TOTAL	58	185	334	382	321	184	1464	6.25
	3.96	12.64	22.81	26.09	21.93	12.57	100.00	
	.66	2.11	3.81	4.36	3.66	2.10	16.71	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.2

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	2	11	8	2	24	6.83
	0.00	.19	.39	2.13	1.55	.39	4.65	
	0.00	.01	.02	.13	.09	.02	.27	
NE	0	2	7	4	0	0	13	4.56
	0.00	.39	1.36	.78	0.00	0.00	2.52	
	0.00	.02	.08	.05	0.00	0.00	.15	
ENE	3	0	2	3	0	0	8	3.73
	.58	0.00	.39	.58	0.00	0.00	1.55	
	.03	0.00	.02	.03	0.00	0.00	.09	
E	1	1	8	2	0	1	13	4.38
	.19	.19	1.55	.39	0.00	.19	2.52	
	.01	.01	.09	.02	0.00	.01	.15	
ESE	0	5	1	1	6	1	14	6.33
	0.00	.97	.19	.19	1.16	.19	2.71	
	0.00	.06	.01	.01	.07	.01	.16	
SE	0	4	8	17	5	1	35	5.83
	0.00	.78	1.55	3.29	.97	.19	6.78	
	0.00	.05	.09	.19	.05	.01	.40	
SSE	2	9	5	11	7	4	38	5.71
	.39	1.74	.97	2.13	1.36	.78	7.35	
	.02	.10	.06	.13	.08	.05	.43	
S	0	7	10	21	15	15	68	7.24
	0.00	1.36	1.94	4.07	2.91	2.91	13.18	
	0.00	.08	.11	.24	.17	.17	.78	
SSW	0	1	3	7	13	11	35	8.94
	0.00	.19	.58	1.36	2.52	2.13	6.78	
	0.00	.01	.03	.08	.15	.13	.40	
SW	0	2	2	7	10	12	33	8.83
	0.00	.39	.39	1.36	1.94	2.33	6.40	
	0.00	.02	.02	.08	.11	.14	.38	
WSW	1	0	0	3	2	5	11	9.27
	.19	0.00	0.00	.58	.39	.97	2.13	
	.01	0.00	0.00	.03	.02	.06	.13	
W	1	0	5	5	4	0	15	5.78
	.19	0.00	.97	.97	.78	0.00	2.91	
	.01	0.00	.06	.06	.05	0.00	.17	
WNW	3	2	6	4	4	0	19	4.64
	.58	.39	1.16	.78	.78	0.00	3.68	
	.03	.02	.07	.05	.05	0.00	.22	
NW	4	1	8	11	6	11	41	7.38
	.78	.19	1.55	2.13	1.16	2.13	7.95	
	.05	.01	.09	.13	.07	.13	.47	
NNW	1	11	8	9	9	15	53	7.15
	.19	2.13	1.55	1.74	1.74	2.91	10.27	
	.01	.13	.09	.10	.10	.17	.61	
N	3	6	15	19	24	27	94	8.06
	.58	1.16	2.91	3.68	4.65	5.23	18.22	
	.03	.07	.17	.22	.27	.31	1.07	
CALM	2						2	CALM
	.39						.39	
	.02						.02	
TOTAL	21	52	90	135	113	105	516	7.04
	4.07	10.08	17.44	26.16	21.90	20.35	100.00	
	.24	.59	1.03	1.54	1.29	1.20	5.89	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.3

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1	2	10	9	15	3	40	6.36
	.17	.34	1.69	1.52	2.54	.51	6.77	
	.01	.02	.11	.10	.17	.03	.46	
NE	0	0	2	7	2	0	11	6.29
	0.00	0.00	.34	1.18	.34	0.00	1.86	
	0.00	0.00	.02	.08	.02	0.00	.13	
ENE	0	2	2	5	0	0	9	4.67
	0.00	.34	.34	.85	0.00	0.00	1.52	
	0.00	.02	.02	.06	0.00	0.00	.10	
E	3	1	8	3	1	0	16	4.12
	.51	.17	1.35	.51	.17	0.00	2.71	
	.03	.01	.09	.03	.01	0.00	.18	
ESE	0	4	4	6	2	2	18	5.59
	0.00	.68	.68	1.02	.34	.34	3.05	
	0.00	.05	.05	.07	.02	.02	.21	
SE	0	3	11	9	2	1	26	5.25
	0.00	.51	1.86	1.52	.34	.17	4.40	
	0.00	.03	.13	.10	.02	.01	.30	
SSE	1	5	6	11	7	2	32	5.96
	.17	.85	1.02	1.86	1.18	.34	5.41	
	.01	.05	.07	.13	.08	.02	.37	
S	0	3	5	24	9	16	57	7.71
	0.00	.51	.85	4.06	1.52	2.71	9.64	
	0.00	.03	.06	.27	.10	.18	.65	
SSW	0	3	12	18	11	13	57	7.24
	0.00	.51	2.03	3.05	1.86	2.20	9.64	
	0.00	.03	.14	.21	.13	.15	.65	
SW	1	1	6	13	12	7	40	7.43
	.17	.17	1.02	2.20	2.03	1.18	6.77	
	.01	.01	.07	.15	.14	.08	.46	
WSW	1	5	6	9	2	3	26	5.58
	.17	.85	1.02	1.52	.34	.51	4.40	
	.01	.06	.07	.10	.02	.03	.30	
W	5	5	8	2	3	0	23	3.73
	.85	.85	1.35	.34	.51	0.00	3.89	
	.06	.06	.09	.02	.03	0.00	.26	
WNW	1	1	1	3	0	2	12	5.77
	.17	.85	.17	.51	0.00	.34	2.03	
	.01	.06	.01	.03	0.00	.02	.14	
NW	2	2	2	8	11	15	40	8.73
	.34	.34	.34	1.35	1.86	2.54	6.77	
	.02	.02	.02	.09	.13	.17	.46	
NNW	4	4	6	13	13	29	69	8.62
	.68	.68	1.02	2.20	2.20	4.91	11.68	
	.05	.05	.07	.15	.15	.33	.79	
N	2	4	14	23	31	27	111	7.98
	.34	.68	2.37	3.88	5.25	4.57	18.78	
	.02	.05	.16	.26	.35	.31	1.27	
CALM	4						4	CALM
	.68						.68	
	.05						.05	
TOTAL	25	49	103	173	121	120	591	7.00
	4.23	8.29	17.43	29.27	20.47	20.30	100.00	
	.29	.56	1.18	1.97	1.38	1.37	6.75	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.4

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	3	11	32	32	25	7	110	5.79
	.11	.40	1.17	1.17	.92	.26	4.04	
	.03	.13	.37	.37	.29	.08	1.26	
NE	5	16	24	30	14	0	89	4.92
	.18	.59	.88	1.10	.51	0.00	3.27	
	.06	.18	.27	.34	.16	0.00	1.02	
ENE	6	17	29	18	10	3	83	4.73
	.22	.62	1.06	.66	.37	.11	3.05	
	.07	.19	.33	.21	.11	.03	.95	
E	8	15	50	60	14	2	149	5.06
	.29	.55	1.83	2.20	.51	.07	5.47	
	.09	.17	.57	.68	.16	.02	1.70	
ESE	9	18	28	62	18	7	142	5.46
	.33	.66	1.03	2.28	.66	.26	5.21	
	.10	.21	.32	.71	.21	.08	1.62	
SE	10	23	40	71	37	12	193	5.87
	.37	.84	1.47	2.61	1.36	.44	7.08	
	.11	.26	.46	.81	.42	.14	2.20	
SSE	7	35	45	52	60	27	226	6.35
	.26	1.28	1.65	1.91	2.20	.99	8.29	
	.08	.40	.51	.59	.68	.31	2.58	
S	12	38	77	86	75	64	352	6.73
	.44	1.39	2.83	3.16	2.75	2.35	12.92	
	.14	.43	.88	.98	.86	.73	4.02	
SSW	3	12	43	47	51	37	193	7.22
	.11	.44	1.58	1.72	1.87	1.36	7.08	
	.03	.14	.49	.54	.58	.42	2.20	
SW	5	15	38	47	35	32	172	7.04
	.18	.55	1.39	1.72	1.28	1.17	6.31	
	.06	.17	.43	.54	.40	.37	1.96	
WSW	7	15	35	20	16	14	107	5.69
	.26	.55	1.28	.73	.59	.51	3.93	
	.08	.17	.40	.23	.18	.16	1.22	
W	10	23	23	10	16	11	93	5.33
	.37	.84	.84	.37	.37	.62	3.41	
	.11	.26	.26	.11	.11	.19	1.06	
WNW	6	9	13	23	13	19	83	6.91
	.22	.33	.48	.84	.48	.70	3.05	
	.07	.10	.15	.26	.15	.22	.95	
NW	6	18	23	32	72	33	184	7.38
	.25	.69	.84	1.17	2.64	1.21	6.75	
	.07	.21	.26	.37	.82	.38	2.15	
NNW	5	14	20	79	65	51	234	7.89
	.18	.51	.73	2.90	2.39	1.87	8.59	
	.06	.16	.23	.90	.74	.58	2.67	
N	9	21	47	104	48	42	271	6.74
	.33	.77	1.72	3.82	1.76	1.54	9.94	
	.10	.24	.54	1.19	.55	.48	3.09	
CALM	44						44	CALM
	1.61						1.61	
	.50						.50	
TOTAL	155	300	567	773	563	367	2725	6.33
	5.69	11.01	20.81	28.37	20.66	13.47	100.00	
	1.77	3.42	6.47	8.82	6.43	4.19	31.11	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.5

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976 TO JUNE,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2	10	18	12	4	0	46	4.54
	.10	.48	.87	.58	.19	0.00	2.23	
	.02	.11	.21	.14	.05	0.00	.53	
NE	5	7	24	23	5	0	64	4.61
	.24	.34	1.16	1.11	.24	0.00	3.10	
	.06	.08	.27	.26	.06	0.00	.73	
ENE	0	6	33	17	1	0	57	4.53
	0.00	.29	1.60	.82	.05	0.00	2.76	
	0.00	.07	.38	.19	.01	0.00	.65	
E	4	11	21	22	0	0	58	4.25
	.19	.53	1.02	1.07	0.00	0.00	2.81	
	.05	.13	.24	.25	0.00	0.00	.66	
ESE	2	4	20	37	15	0	78	5.66
	.10	.19	.97	1.79	.73	0.00	3.78	
	.02	.05	.23	.42	.17	0.00	.89	
SE	2	17	55	78	35	7	185	6.38
	.10	.82	1.51	3.78	2.71	.34	8.96	
	.02	.19	.29	.89	.64	.08	2.11	
SSE	5	17	61	74	67	17	221	6.57
	.24	.82	1.99	3.59	3.25	.82	10.71	
	.06	.19	.47	.84	.76	.19	2.52	
S	9	14	68	116	98	20	325	6.46
	.44	.68	3.69	5.62	4.75	.97	15.75	
	.10	.16	.78	1.32	1.12	.23	3.71	
SSW	3	4	27	79	87	30	230	7.47
	.15	.19	1.31	3.83	4.22	1.45	11.14	
	.03	.05	.31	.90	.99	.34	2.63	
SW	3	10	19	54	48	26	160	7.14
	.15	.48	.92	2.62	2.33	1.26	7.75	
	.03	.11	.22	.62	.55	.30	1.83	
WSW	0	6	24	22	13	2	67	5.60
	0.00	.29	1.16	1.07	.63	.10	3.25	
	0.00	.07	.27	.25	.15	.02	.76	
W	3	20	27	17	20	6	93	5.32
	.15	.97	1.31	.82	.97	.29	4.51	
	.03	.23	.31	.19	.23	.07	1.06	
WNW	4	8	17	27	15	6	77	6.00
	.19	.39	.82	1.31	.73	.29	3.73	
	.05	.09	.19	.31	.17	.07	.88	
NW	7	9	17	27	53	14	127	6.97
	.34	.44	.82	1.31	2.57	.68	6.15	
	.08	.1	.19	.31	.61	.16	1.45	
NNW	6	9	21	46	27	10	128	5.98
	.29	.8	1.02	2.23	1.31	.48	6.20	
	.07	.21	.24	.53	.31	.11	1.46	
N	10	13	29	34	26	7	119	5.54
	.48	.63	1.41	1.65	1.26	.34	5.77	
	.11	.15	.33	.39	.30	.08	1.36	
CALM	29						29	CALM
	1.41						1.41	
	.33						.33	
TOTAL	94	174	431	685	535	145	2064	6.14
	4.55	8.43	20.88	33.19	25.92	7.03	100.00	
	1.07	1.99	4.92	7.82	6.11	1.66	23.56	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.6

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	5	7	7	2	0	0	21	2.77
	.54	.75	.75	.22	0.00	0.00	2.26	
	.06	.08	.08	.02	0.00	0.00	.24	
NE	2	6	8	4	0	0	20	3.51
	.22	.65	.86	.43	0.00	0.00	2.15	
	.02	.07	.09	.05	0.00	0.00	.23	
ENE	2	6	9	0	0	0	17	3.21
	.22	.65	.97	0.00	0.00	0.00	1.83	
	.02	.07	.10	0.00	0.00	0.00	.19	
E	0	3	4	3	1	0	11	4.44
	0.00	.32	.43	.32	.11	0.00	1.18	
	0.00	.03	.05	.03	.01	0.00	.13	
ESE	1	0	6	9	0	0	16	5.10
	.11	0.00	.65	.97	0.00	0.00	1.72	
	.01	0.00	.07	.10	0.00	0.00	.18	
SE	0	5	17	18	14	1	55	5.83
	0.00	.54	1.83	1.94	1.51	.11	5.91	
	0.00	.06	.19	.21	.16	.01	.63	
SSE	1	8	22	31	18	1	81	5.71
	.11	.86	2.37	3.33	1.94	.11	8.71	
	.01	.09	.25	.35	.21	.01	.92	
S	6	16	45	64	23	3	157	5.37
	.65	1.72	4.84	6.88	2.47	.32	16.88	
	.07	.18	.51	.73	.26	.03	1.79	
SSW	0	6	34	53	31	9	133	6.32
	0.00	.65	3.66	5.70	3.33	.97	14.30	
	0.00	.07	.39	.61	.35	.10	1.52	
SW	0	10	22	41	25	3	101	5.98
	0.00	1.08	2.37	4.41	2.69	.32	10.88	
	0.00	.11	.25	.47	.29	.03	1.15	
WSW	2	7	13	8	7	0	37	4.91
	.22	.75	1.40	.86	.75	0.00	3.98	
	.02	.08	.15	.09	.08	0.00	.42	
W	5	8	15	19	12	2	58	5.45
	.54	.86	1.61	2.04	1.29	.22	6.24	
	.06	.09	.17	.22	.14	.02	.66	
WNW	1	5	15	11	5	11	48	6.41
	.11	.54	1.61	1.18	.54	1.18	5.16	
	.01	.06	.17	.13	.06	.13	.55	
NW	1	10	5	16	14	3	49	6.25
	.11	1.08	.54	1.72	1.51	.32	5.27	
	.01	.11	.06	.18	.16	.03	.56	
NNW	9	13	18	15	2	0	57	3.93
	.97	1.40	1.94	1.61	.22	0.00	6.13	
	.10	.15	.21	.17	.02	0.00	.65	
N	9	6	14	9	2	0	40	3.69
	.97	.65	1.51	.97	.22	0.00	4.30	
	.10	.07	.16	.10	.02	0.00	.46	
CALM	29						29	CALM
	3.12						3.12	
	.33						.33	
TOTAL	70	116	254	303	154	33	930	5.24
	7.53	12.47	27.31	32.58	16.56	3.55	100.00	
	.80	1.32	2.90	3.46	1.76	.38	10.62	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.7

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976 TO JUNE,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2	3	3	0	1	0	9	3.32
	.43	.64	.64	0.00	.21	0.00	1.91	
	.02	.03	.03	0.00	.01	0.00	.10	
NE	5	6	6	1	0	0	18	2.82
	1.06	1.28	1.28	.21	0.00	0.00	3.83	
	.06	.07	.07	.01	0.00	0.00	.21	
ENE	1	3	6	1	0	0	11	3.71
	.21	.64	1.28	.21	0.00	0.00	2.34	
	.01	.03	.07	.01	0.00	0.00	.13	
E	4	0	3	1	0	0	8	2.84
	.85	0.00	.64	.21	0.00	0.00	1.70	
	.05	0.00	.03	.01	0.00	0.00	.09	
ESE	2	2	4	0	0	0	8	2.90
	.43	.43	.85	0.00	0.00	0.00	1.70	
	.02	.02	.05	0.00	0.00	0.00	.09	
SE	3	11	8	8	2	0	32	4.00
	.64	2.34	1.70	1.70	.43	0.00	6.81	
	.03	.13	.09	.09	.02	0.00	.37	
SSE	2	10	12	11	2	0	36	4.32
	.21	2.13	2.55	2.34	.43	0.00	7.66	
	.01	.11	.14	.13	.02	0.00	.41	
S	1	5	18	7	4	0	35	4.56
	.21	1.06	3.83	1.49	.85	0.00	7.45	
	.01	.06	.21	.08	.05	0.00	.40	
SSW	1	3	12	12	3	0	31	5.03
	.21	.64	2.55	2.55	.64	0.00	6.60	
	.01	.03	.14	.14	.03	0.00	.35	
SW	0	4	22	20	9	1	56	5.54
	0.00	.85	4.68	4.26	1.91	.21	11.91	
	0.00	.05	.25	.23	.10	.01	.64	
WSW	2	19	14	10	1	0	46	3.83
	.43	4.04	2.98	2.13	.21	0.00	9.79	
	.02	.22	.16	.11	.01	0.00	.53	
W	3	16	16	8	7	0	50	4.17
	.64	3.40	3.40	1.70	1.49	0.00	10.64	
	.03	.18	.18	.09	.08	0.00	.57	
WNW	6	5	10	10	1	1	29	4.66
	1.28	1.06	2.13	2.13	.21	.21	6.17	
	.06	.06	.11	.11	.01	.01	.33	
NW	2	2	7	13	2	2	27	5.54
	.43	.43	1.49	2.77	.43	.43	5.74	
	.02	.02	.08	.15	.02	.02	.31	
NNW	3	7	17	7	0	0	34	3.69
	.64	1.49	3.62	1.49	0.00	0.00	7.23	
	.03	.08	.19	.08	0.00	0.00	.39	
N	6	5	9	9	0	1	30	3.87
	1.28	1.06	1.91	1.91	0.00	.21	6.38	
	.07	.06	.10	.10	0.00	.01	.34	
CALM	10						10	CALM
	2.13						2.13	
	.11						.11	
TOTAL	47	101	167	118	32	5	470	4.23
	10.00	21.49	35.53	25.11	6.81	1.06	100.00	
	.54	1.15	1.91	1.35	.37	.06	5.37	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.8

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976 TO JUNE,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	18 .21	50 .57	95 1.08	80 .91	74 .84	15 .17	332 3.79	5.38
NE	21 .24	52 .59	88 1.00	80 .91	23 .26	0 0.00	264 3.01	4.43
ENE	17 .19	49 .56	97 1.11	47 .54	11 .13	3 .03	224 2.56	4.20
E	20 .23	44 .50	113 1.29	97 1.11	16 .18	3 .03	293 3.34	4.55
ESE	15 .17	44 .50	76 .87	124 1.42	43 .49	11 .13	313 3.57	5.34
SE	17 .19	79 .90	126 1.44	225 2.57	131 1.50	25 .29	603 6.88	5.84
SSE	24 .27	96 1.10	148 1.69	230 2.63	189 2.16	55 .63	742 8.47	6.14
S	30 .34	96 1.10	247 2.82	367 4.19	251 2.87	140 1.60	1131 12.91	6.48
SSW	11 .13	35 .40	144 1.64	232 2.65	208 2.37	121 1.38	751 8.57	7.14
SW	10 .11	46 .53	137 1.56	205 2.34	163 1.86	93 1.06	654 7.47	6.90
WSW	14 .16	59 .67	102 1.16	75 .86	48 .55	28 .32	326 3.72	5.43
W	26 .30	81 .92	99 1.13	64 .73	56 .64	25 .29	351 4.01	4.99
WNW	19 .22	35 .40	71 .81	86 .98	43 .49	39 .45	293 3.34	6.03
NW	26 .30	47 .54	76 .87	137 1.56	191 2.18	93 1.06	570 6.51	7.15
NNW	38 .43	80 .91	141 1.61	244 2.79	181 2.07	149 1.70	833 9.51	6.87
N	44 .50	84 .96	186 2.12	276 3.15	211 2.41	159 1.82	960 10.96	6.71
CALM	120 1.37						120 1.37	CALM
TOTAL	470 5.37	977 11.15	1946 22.21	2569 29.33	1839 20.99	959 10.95	8760 100.00	6.13

NUMBER OF VALID OBSERVATIONS	8760	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	8760	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

TABLE 5.9

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1	3	3	2	0	0	9	3.32
	.49	1.48	1.48	.99	0.00	0.00	4.43	
	.13	.40	.40	.27	0.00	0.00	1.21	
NE	1	6	3	0	0	0	10	2.64
	.49	2.95	1.48	0.00	0.00	0.00	4.93	
	.13	.81	.40	0.00	0.00	0.00	1.34	
ENE	1	5	1	0	0	0	7	2.24
	.49	2.46	.49	0.00	0.00	0.00	3.45	
	.13	.67	.13	0.00	0.00	0.00	.94	
E	0	1	0	0	0	0	1	2.01
	0.00	.49	0.00	0.00	0.00	0.00	.49	
	0.00	.13	0.00	0.00	0.00	0.00	.13	
ESE	1	3	4	4	0	0	12	4.03
	.49	1.48	1.97	1.97	0.00	0.00	5.91	
	.13	.40	.54	.54	0.00	0.00	1.61	
SE	0	7	2	0	1	0	10	3.41
	0.00	3.45	.99	0.00	.49	0.00	4.93	
	0.00	.94	.27	0.00	.13	0.00	1.34	
SSE	2	3	3	3	0	0	11	3.59
	.99	1.48	1.48	1.48	0.00	0.00	5.42	
	.27	.40	.40	.40	0.00	0.00	1.48	
S	0	4	5	3	6	1	19	5.92
	0.00	1.97	2.46	1.48	2.96	.49	9.36	
	0.00	.54	.67	.40	.81	.13	2.55	
SSW	0	3	2	2	2	9	18	8.12
	0.00	1.48	.99	.99	.99	4.43	8.87	
	0.00	.40	.27	.27	.27	1.21	2.42	
SW	0	2	18	15	1	54	6.17	
	0.00	.99	8.87	8.87	7.39	.49	26.60	
	0.00	.27	2.42	2.42	2.02	.13	7.26	
WSW	1	3	7	1	0	0	12	3.37
	.49	1.48	3.45	.49	0.00	0.00	5.91	
	.13	.40	.94	.13	0.00	0.00	1.61	
W	1	2	1	0	0	0	4	2.04
	.49	.99	.49	0.00	0.00	0.00	1.97	
	.13	.27	.13	0.00	0.00	0.00	.54	
WNW	1	0	2	0	0	0	3	2.84
	.49	0.00	.99	0.00	0.00	0.00	1.48	
	.13	0.00	.27	0.00	0.00	0.00	.40	
NW	0	2	1	0	0	0	3	3.05
	0.00	.99	.49	0.00	0.00	0.00	1.48	
	0.00	.27	.13	0.00	0.00	0.00	.40	
NNW	1	1	5	2	0	1	10	4.60
	.49	.49	2.46	.99	0.00	.49	4.93	
	.13	.13	.67	.27	0.00	.13	1.34	
N	2	3	9	5	0	0	19	3.77
	.99	1.48	4.43	2.46	0.00	0.00	9.36	
	.27	.40	1.21	.67	0.00	0.00	2.55	
CALM	1						1	CALM
	.49						.49	
	.13						.13	
TOTAL	13	48	66	40	24	12	203	4.80
	6.40	23.65	32.51	19.70	11.82	5.91	100.00	
	1.75	6.45	8.87	5.38	3.23	1.61	27.28	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.10

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	5.69
NE	0 0.00 0.00	1 2.44 .13	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	2.84
ENE	2 4.88 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	.47
E	1 2.44 .13	0 0.00 0.00	2 4.88 .27	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	4 9.76 .54	4.50
ESE	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	4.26
SE	0 0.00 0.00	1 2.44 .13	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	3.08
SSE	2 4.88 .27	3 7.32 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 12.20 .67	1.80
S	0 0.00 0.00	4 9.76 .54	2 4.88 .27	2 4.88 .27	1 2.44 .13	0 0.00 0.00	9 21.95 1.21	4.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	0 0.00 0.00	2 4.88 .27	4 9.76 .54	8.41
SW	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	1 2.44 .13	2 4.88 .27	0 0.00 0.00	4 9.76 .54	7.11
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	5.69
W	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	3.31
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	1 2.44 .13	0 0.00 0.00	1 2.44 .13	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	3 7.32 .40	3.79
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	7 17.07 .94	10 24.39 1.34	8 19.51 1.08	10 24.39 1.34	3 7.32 .40	3 7.32 .40	41 100.00 5.51	4.29

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.11

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	5.69
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	2.84
ESE	0 0.00 0.00	1 2.86 .13	1 2.86 .13	2 5.71 .27	0 0.00 0.00	0 0.00 0.00	4 11.43 .54	4.62
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	1 2.86 .13	3 8.57 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 11.43 .54	2.01
S	0 0.00 0.00	2 5.71 .27	0 0.00 0.00	1 2.86 .13	1 2.86 .13	0 0.00 0.00	4 11.43 .54	5.33
SSW	0 0.00 0.00	1 2.86 .13	1 2.86 .13	1 2.86 .13	1 2.86 .13	4 11.43 .54	8 22.86 1.08	7.82
SW	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	1 2.86 .13	0 0.00 0.00	3 8.57 .40	5.53
WSW	0 0.00 0.00	3 8.57 .40	1 2.86 .13	2 5.71 .27	0 0.00 0.00	0 0.00 0.00	6 17.14 .81	3.63
W	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	2.37
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	1 2.86 .13	1 2.86 .13	0 0.00 0.00	3 8.57 .40	6.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 5.71 .27	12 34.29 1.61	4 11.43 .54	9 25.71 1.21	4 11.43 .54	4 11.43 .54	35 100.00 4.70	5.08

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCE THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5.12

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96,93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 1.11 .27	3 1.67 .40	5 2.78 .67	1 .56 .13	0 0.00 0.00	11 6.11 1.48	5.21
NE	0 0.00 0.00	1 .56 .13	3 1.67 .40	5 2.78 .67	1 .56 .13	0 0.00 0.00	10 5.56 1.34	5.21
ENE	2 1.11 .27	6 3.33 .81	4 2.22 .54	1 .56 .13	1 .56 .13	0 0.00 0.00	14 7.78 1.88	3.52
E	0 0.00 0.00	6 3.33 .81	11 6.11 1.48	3 1.67 .40	1 .56 .13	0 0.00 0.00	21 11.67 2.82	3.91
ESE	2 1.11 .27	4 2.22 .54	3 1.67 .40	0 0.00 0.00	2 1.11 .27	0 0.00 0.00	11 6.11 1.48	3.40
SE	1 .56 .13	0 0.00 0.00	3 1.67 .40	2 1.11 .27	1 .56 .13	0 0.00 0.00	7 3.89 .94	5.01
SSE	1 .56 .13	1 .56 .13	2 1.11 .27	4 2.22 .54	1 .56 .13	0 0.00 0.00	9 5.00 1.21	4.95
S	0 0.00 0.00	1 .56 .13	1 .56 .13	7 3.89 .94	1 .56 .13	4 2.22 .54	14 7.78 1.88	7.45
SSW	0 0.00 0.00	0 0.00 0.00	2 1.11 .27	8 4.44 1.08	13 7.22 1.75	5 2.78 .67	28 15.56 3.76	8.24
SW	1 .56 .13	1 .56 .13	5 2.78 .67	10 5.56 1.34	3 1.67 .40	2 1.11 .27	22 12.22 2.96	6.35
WSW	0 0.00 0.00	2 1.11 .27	6 3.33 .81	3 1.67 .40	1 .56 .13	0 0.00 0.00	12 6.67 1.61	4.56
W	0 0.00 0.00	0 0.00 0.00	1 .56 .13	0 0.00 0.00	1 .56 .13	0 0.00 0.00	2 1.11 .27	5.92
WNW	0 0.00 0.00	0 0.00 0.00	1 .56 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .56 .13	3.32
NW	2 1.11 .27	2 1.11 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.22 .54	1.54
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	1 .56 .13	3 1.67 .40	8 4.44 1.08	0 0.00 0.00	0 0.00 0.00	12 6.67 1.61	5.27
CALM	2 1.11 .27						2 1.11 .27	CALM
TOTAL	11 6.11 1.48	27 15.00 3.63	48 26.67 6.45	56 31.11 7.53	27 15.00 3.63	11 6.11 1.48	180 100.00 24.19	5.40

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-13

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	4 1.98 .54	1 .50 .13	2 .99 .27	0 0.00 0.00	0 0.00 0.00	7 3.47 .94	3.55
NE	1 .50 .13	1 .50 .13	9 4.46 1.21	7 3.47 .94	1 .50 .13	0 0.00 0.00	19 9.41 2.55	4.44
ENE	0 0.00 0.00	2 .99 .27	1 .50 .27	1 .50 .13	0 0.00 0.00	0 0.00 0.00	5 2.48 .67	3.89
E	0 0.00 0.00	2 .99 .27	0 0.00 0.00	1 .50 .13	0 0.00 0.00	0 0.00 0.00	3 1.49 .40	3.32
ESE	1 .50 .13	0 0.00 0.00	2 .99 .27	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	6 2.97 .81	4.42
SE	0 0.00 0.00	2 .99 .27	2 .99 .27	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	7 3.47 .94	4.74
SSE	1 .50 .13	2 .99 .27	3 1.49 .40	7 3.47 .94	1 .50 .13	0 0.00 0.00	14 6.93 1.88	4.81
S	3 1.49 .40	1 .50 .13	3 1.49 .40	19 9.41 2.55	8 3.96 1.08	2 .99 .27	39 19.31 5.24	6.47
SSW	0 0.00 0.00	0 0.00 0.00	8 3.96 1.08	17 8.42 2.28	25 12.38 3.36	2 .99 .27	52 25.74 6.99	7.32
SW	0 0.00 0.00	0 0.00 0.00	2 .99 .27	13 6.44 1.75	10 4.95 1.34	0 0.00 0.00	25 12.38 3.36	6.69
WSW	0 0.00 0.00	0 0.00 0.00	5 2.48 .67	2 .99 .27	1 .50 .13	0 0.00 0.00	8 3.96 1.08	4.91
W	0 0.00 0.00	0 0.00 0.00	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .50 .13	4.27
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .50 .13	0 0.00 0.00	0 0.00 0.00	1 .50 .13	7.11
NW	1 .50 .13	0 0.00 0.00	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .99 .27	2.13
NNW	0 0.00 0.00	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .50 .13	1.90
N	1 .50 .13	3 1.49 .40	2 .99 .27	3 1.49 .40	1 .50 .13	0 0.00 0.00	10 4.95 1.34	3.84
CALM	2 .99 .27						2 .99 .27	CALM
TOTAL	10 4.95 1.34	18 8.91 2.42	41 20.30 5.51	79 39.11 10.62	47 23.27 6.32	7 3.47 .94	202 100.00 27.15	5.75

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-14

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 3.23 .27	3 4.84 .40	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 11.29 .94	2.09
NE	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	2.37
ENE	0 0.00 0.00	2 3.23 .27	3 4.84 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 8.06 .67	3.60
E	0 0.00 0.00	0 0.00 0.00	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .27	3.55
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	5.69
SE	0 0.00 0.00	1 1.61 .13	5 8.06 .67	5 8.06 .67	2 3.23 .27	0 0.00 0.00	13 20.97 1.75	5.36
SSE	0 0.00 0.00	1 1.61 .13	1 1.61 .13	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	4 6.45 .54	4.27
S	0 0.00 0.00	2 3.23 .27	0 0.00 0.00	4 6.45 .54	1 1.61 .13	0 0.00 0.00	7 11.29 .94	5.21
SSW	0 0.00 0.00	0 0.00 0.00	3 4.84 .40	4 6.45 .54	0 0.00 0.00	0 0.00 0.00	7 11.29 .94	5.04
SW	0 0.00 0.00	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	3 4.84 .40	4.11
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	2 3.23 .27	4.84
WNW	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	1.90
NW	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	3.04
NNW	1 1.61 .13	1 1.61 .13	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .40	2.28
N	1 1.61 .13	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .27	1.99
CALM	3 4.84 .40						3 4.84 .40	CALM
TOTAL	7 11.29 .94	14 22.58 1.88	20 32.26 2.69	17 27.42 2.28	4 6.45 .54	0 0.00 0.00	62 100.00 8.33	3.94

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-15

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	2.84
NE	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	2.37
ENE	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	2.84
E	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	4.74
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	2.37
SSE	1 4.76 .13	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 9.52 .27	2.13
S	0 0.00 0.00	0 0.00 0.00	4 19.05 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 19.05 .54	3.79
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	3.79
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	2.84
WNW	1 4.76 .13	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 9.52 .27	1.18
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	4 19.05 .54	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 23.81 .67	1.61
CALM	1 4.76 .13						1 4.76 .13	CALM
TOTAL	7 33.33 .94	6 28.57 .81	8 38.10 1.08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	21 100.00 2.82	2.46

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-16

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	3 .40	13 1.75	9 1.21	11 1.48	1 .13	0 0.00	37 4.97	3.81
NE	2 .27	11 1.48	16 2.15	12 1.61	2 .27	0 0.00	43 5.78	4.08
ENE	5 .67	16 2.15	10 1.34	2 .27	1 .13	0 0.00	34 4.57	3.12
E	1 .13	10 1.34	16 2.15	4 .54	1 .13	1 .13	33 4.44	3.84
ESE	4 .54	9 1.21	10 1.34	11 1.48	2 .27	0 0.00	36 4.84	4.03
SE	1 .13	12 1.61	13 1.75	10 1.34	4 .54	0 0.00	40 5.38	4.51
SSE	8 1.08	13 1.75	10 1.34	16 2.15	2 .27	0 0.00	49 6.59	3.87
S	3 .40	14 1.88	15 2.02	36 4.84	18 2.42	10 1.34	96 12.90	6.02
SSW	0 0.00	4 .54	16 2.15	34 4.57	41 5.51	22 2.96	117 15.73	7.60
SW	2 .27	5 .67	27 3.63	43 5.78	32 4.30	3 .40	112 15.05	6.26
WSW	1 .13	8 1.08	19 2.55	9 1.21	2 .27	0 0.00	39 5.24	4.15
W	2 .27	4 .54	4 .54	2 .27	1 .13	0 0.00	13 1.75	3.52
WNW	2 .27	2 .27	3 .40	1 .13	0 0.00	0 0.00	8 1.08	2.90
NW	3 .40	4 .54	3 .40	0 0.00	0 0.00	0 0.00	10 1.34	2.26
NNW	2 .27	3 .40	6 .81	2 .27	0 0.00	1 .13	14 1.88	3.91
N	9 1.21	7 .94	18 2.42	18 2.42	2 .27	0 0.00	54 7.26	3.98
CALM	9 1.21						9 1.21	CALM
TOTAL	57 7.66	135 18.15	195 26.21	211 28.36	109 14.65	37 4.97	744 100.00	5.05

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

1

Revision 1
1/78

TABLE 5-17

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1	3	8	0	1	0	13	3.87
	.43	1.29	3.43	0.00	.43	0.00	5.58	
	.13	.40	1.08	0.00	.13	0.00	1.75	
NE	2	2	5	0	0	0	9	2.79
	.86	.86	2.15	0.00	0.00	0.00	3.86	
	.27	.27	.67	0.00	0.00	0.00	1.21	
ENE	1	3	5	2	0	0	11	3.75
	.43	1.29	2.15	.86	0.00	0.00	4.72	
	.13	.40	.67	.27	0.00	0.00	1.48	
E	0	2	2	3	0	0	7	4.27
	0.00	.86	.86	1.29	0.00	0.00	3.00	
	0.00	.27	.27	.40	0.00	0.00	.94	
ESE	0	2	1	1	0	0	4	4.15
	0.00	.86	.43	.43	0.00	0.00	1.72	
	0.00	.27	.13	.13	0.00	0.00	.54	
SE	0	0	4	11	5	0	20	6.38
	0.00	0.00	1.72	4.72	2.15	0.00	8.58	
	0.00	0.00	.54	1.48	.67	0.00	2.69	
SSE	4	5	9	13	5	0	36	4.85
	1.72	2.15	3.86	5.58	2.15	0.00	15.45	
	.54	.67	1.21	1.75	.67	0.00	4.84	
S	1	5	11	28	3	1	49	5.28
	.43	2.15	4.72	12.02	1.29	.43	21.03	
	.13	.67	1.48	3.76	.40	.13	6.59	
SSW	3	1	8	10	3	0	25	5.12
	1.29	.43	3.43	4.29	1.29	0.00	10.73	
	.40	.13	1.08	1.34	.40	0.00	3.36	
SW	1	0	2	3	2	2	10	6.73
	.43	0.00	.86	1.29	.86	.86	4.29	
	.13	0.00	.27	.40	.27	.27	1.34	
WSW	0	2	1	0	0	0	3	2.69
	0.00	.86	.43	0.00	0.00	0.00	1.29	
	0.00	.27	.13	0.00	0.00	0.00	.40	
W	1	5	0	0	0	0	6	2.21
	.43	2.15	0.00	0.00	0.00	0.00	2.58	
	.13	.67	0.00	0.00	0.00	0.00	.81	
WNW	1	0	0	1	0	0	2	3.55
	.43	0.00	0.00	.43	0.00	0.00	.86	
	.13	0.00	0.00	.13	0.00	0.00	.27	
NW	2	0	0	1	1	0	4	3.91
	.86	0.00	0.00	.43	.43	0.00	1.72	
	.27	0.00	0.00	.13	.13	0.00	.54	
NNW	2	1	1	0	0	0	4	1.78
	.86	.43	.43	0.00	0.00	0.00	1.72	
	.27	.13	.13	0.00	0.00	0.00	.54	
N	1	3	7	9	4	6	30	6.49
	.43	1.29	3.00	3.86	1.72	2.58	12.88	
	.13	.40	.94	1.21	.54	.81	4.03	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	20	34	64	82	24	9	233	5.00
	8.58	14.59	27.47	35.19	10.30	3.86	100.00	
	2.69	4.57	8.60	11.02	3.23	1.21	31.32	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-18

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7625-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	5.69
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 16.67 .54	1 4.17 .13	0 0.00 0.00	5 20.83 .67	7.30
S	0 0.00 0.00	0 0.00 0.00	2 8.33 .27	0 0.00 0.00	2 8.33 .27	0 0.00 0.00	4 16.67 .54	6.28
SSW	0 0.00 0.00	1 4.17 .13	1 4.17 .13	2 8.33 .27	0 0.00 0.00	1 4.17 .13	5 20.83 .67	6.26
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 8.33 .27	0 0.00 0.00	2 8.33 .27	8.53
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 8.33 .27	2 8.33 .27	10.43
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	5.21
N	0 0.00 0.00	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	1.90
CALM	0 0.00 0.00	1 4.17 .13	1 4.17 .13	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	3 12.50 .40	4.90
TOTAL	0 0.00 0.00	3 12.50 .40	4 16.67 .54	9 37.50 1.21	5 20.83 .67	3 12.50 .40	0 0.00 0.00 24 100.00 3.23	CALM 6.60

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-19

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST, 1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	1 4.00 .13	1 4.00 .13	3 12.00 .40	8.06
NE	0 0.00 0.00	2 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	6.16
E	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	4.98
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	1 4.00 .13	7.58
SE	0 0.00 0.00	1 4.00 .13	1 4.00 .13	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	3 12.00 .40	4.58
SSE	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	3.79
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	[illegible]
SSW	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	1 4.00 .13	3 12.00 .40	0 0.00 0.00	5 20.00 .67	7.30
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	1 4.00 .13	8.53
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	[illegible]
N	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	5 20.00 .67	0 0.00 0.00	0 0.00 0.00	6 24.00 .81	5.84
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 4.00 .13	4 4.00 .13	5 20.00 .67	11 44.00 1.48	6 24.00 .81	1 4.00 .13	25 100.00 3.36	6.07

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-20

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .86 .13	1 .86 .13	2 1.72 .27	0 0.00 0.00	4 3.45 .54	6.28
NE	0 0.00 0.00	2 1.72 .27	3 2.59 .40	1 .86 .13	1 .86 .13	0 0.00 0.00	7 6.03 .94	4.33
ENE	0 0.00 0.00	1 .86 .13	4 3.45 .54	2 1.72 .27	0 0.00 0.00	0 0.00 0.00	7 6.03 .94	4.54
E	1 .86 .13	0 0.00 0.00	5 4.31 .67	10 8.62 1.34	0 0.00 0.00	0 0.00 0.00	16 13.79 2.15	5.10
ESE	1 .86 .13	0 0.00 0.00	0 0.00 0.00	11 9.48 1.48	1 .86 .13	0 0.00 0.00	13 11.21 1.75	6.02
SE	0 0.00 0.00	1 .86 .13	0 0.00 0.00	4 3.45 .54	8 6.90 1.08	1 .86 .13	14 12.07 1.88	7.82
SSE	0 0.00 0.00	1 .86 .13	5 4.31 .67	1 .86 .13	3 2.59 .40	0 0.00 0.00	10 8.62 1.34	5.45
S	0 0.00 0.00	0 0.00 0.00	5 4.31 .67	5 4.31 .67	2 1.72 .27	2 1.72 .27	14 12.07 1.88	6.81
SSW	0 0.00 0.00	1 .86 .13	4 3.45 .54	1 .86 .13	1 .86 .13	0 0.00 0.00	7 6.03 .94	4.67
SW	0 0.00 0.00	1 .86 .13	3 2.59 .40	2 1.72 .27	2 1.72 .27	0 0.00 0.00	8 6.90 1.08	5.98
WSW	0 0.00 0.00	1 .86 .13	1 .86 .13	1 .86 .13	1 .86 .13	0 0.00 0.00	4 3.45 .54	4.74
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	1 .86 .13	1 .86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.72 .27	3.32
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	1 .86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .86 .13	1.90
N	0 0.00 0.00	1 .86 .13	2 1.72 .27	5 4.31 .67	1 .86 .13	0 0.00 0.00	9 7.76 1.21	5.53
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 1.72 .27	11 9.48 1.48	34 29.31 4.57	44 37.93 5.91	22 18.97 2.96	3 2.59 .40	116 100.00 15.59	5.72

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-21

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	2	4	2	0	0	8	4.56
	0.00	.99	1.98	.99	0.00	0.00	3.95	
	0.00	.27	.54	.27	0.00	0.00	1.08	
NE	0	0	5	2	0	0	7	5.15
	0.00	0.00	2.48	.99	0.00	0.00	3.47	
	0.00	0.00	.67	.27	0.00	0.00	.94	
ENE	0	0	8	2	0	0	10	4.41
	0.00	0.00	3.96	.99	0.00	0.00	4.95	
	0.00	0.00	1.08	.27	0.00	0.00	1.34	
E	1	1	0	4	0	0	5	5.40
	0.50	.50	0.00	1.98	0.00	0.00	2.48	
	0.00	.13	0.00	.54	0.00	0.00	.67	
ESE	1	3	2	7	3	0	16	5.48
	.50	1.49	.99	3.47	1.49	0.00	7.92	
	.13	.40	.27	.94	.40	0.00	2.15	
SE	0	0	4	23	15	0	42	6.88
	0.00	0.00	1.98	11.39	7.43	0.00	20.79	
	0.00	0.00	.54	3.09	2.02	0.00	5.65	
SSE	0	2	9	14	7	0	32	5.78
	0.00	.99	4.46	6.93	3.47	0.00	15.84	
	0.00	.27	1.21	1.88	.94	0.00	4.30	
S	0	0	11	15	11	0	37	6.28
	0.00	0.00	5.45	7.43	5.45	0.00	18.32	
	0.00	0.00	1.48	2.02	1.47	0.00	4.97	
SSW	0	0	4	13	7	6	30	7.65
	0.00	0.00	1.98	6.44	3.47	2.97	14.85	
	0.00	0.00	.54	1.75	.94	.81	4.03	
SW	0	0	0	2	4	1	10	7.77
	0.00	0.00	0.00	2.48	1.98	.50	4.95	
	0.00	0.00	0.00	.67	.54	.13	1.34	
WSW	0	0	0	1	0	0	1	5.69
	0.00	0.00	0.00	.50	0.00	0.00	.50	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
W	0	0	0	1	0	0	1	5.21
	0.00	0.00	0.00	.50	0.00	0.00	.50	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
WNW	0	0	0	1	0	0	1	5.69
	0.00	0.00	0.00	.50	0.00	0.00	.50	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
NW	0	0	0	0	1	0	1	8.53
	0.00	0.00	0.00	0.00	.50	0.00	.50	
	0.00	0.00	0.00	0.00	.13	0.00	.13	
NNW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
N	0	0	1	0	0	0	1	4.27
	0.00	0.00	.50	0.00	0.00	0.00	.50	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	8	48	76	48	7	200	6.31
	.50	3.96	23.76	44.06	23.76	3.47	100.00	
	.13	1.08	6.45	12.10	6.45	.94	27.15	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCE S THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-22

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL F
DAT. SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	3 3.00 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 3.00 .40	4.27
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	2 2.00 .27	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	3 3.00 .40	4.74
SE	0 0.00 0.00	1 1.00 .13	2 2.00 .27	2 2.00 .27	6 6.00 .81	0 0.00 0.00	11 11.00 1.48	6.59
SSE	1 1.00 .13	2 2.00 .27	3 3.00 .40	8 8.00 1.08	7 7.00 .94	0 0.00 0.00	21 21.00 2.82	6.09
S	0 0.00 0.00	1 1.00 .13	3 3.00 .40	10 10.00 1.34	5 5.00 .67	0 0.00 0.00	19 19.00 2.55	6.24
SSW	0 0.00 0.00	2 2.00 .27	5 5.00 .67	11 11.00 1.48	10 10.00 1.34	2 2.00 .27	30 30.00 4.03	6.71
SW	0 0.00 0.00	2 2.00 .27	2 2.00 .27	4 4.00 .54	2 2.00 .27	0 0.00 0.00	10 10.00 1.34	5.26
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	.95
WNW	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	.47
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	5.69
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	3 3.00 .40	8 8.00 1.08	20 20.00 2.69	37 37.00 4.97	30 30.00 4.03	2 2.00 .27	100 100.00 13.44	6.07

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-23

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7 35-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	3.79
ESE	0 0.00 0.00	1 2.27 .13	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.82 .40	3.63
CE	3 6.82 .40	3 6.82 .40	2 4.55 .27	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	10 22.73 1.34	2.94
SSE	0 0.00 0.00	3 6.82 .40	1 2.27 .13	2 4.55 .27	1 2.27 .13	0 0.00 0.00	7 15.91 .94	4.74
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	4 9.09 .54	0 0.00 0.00	5 11.36 .67	7.58
SSW	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	2 4.55 .27	5.69
SW	0 0.00 0.00	0 0.00 0.00	4 9.09 .54	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	5 11.36 .67	4.55
WSW	0 0.00 0.00	0 0.00 0.00	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.55 .27	3.55
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	1 2.27 .13	4 9.09 .54	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 15.91 .94	2.44
N	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	2 4.55 .27	4.97
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	4 9.09 .54	11 25.00 1.48	16 36.36 2.15	7 15.91 .94	6 13.64 .81	0 0.00 0.00	44 100.00 5.91	4.17

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-24

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1975

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .13	5 .67	13 1.75	5 .67	4 .54	1 .13	29 3.90	4.89
NE	2 .27	4 .54	13 1.75	3 .40	1 .13	0 0.00	23 3.09	3.98
ENE	1 .13	4 .54	20 2.69	7 .94	0 0.00	0 0.00	32 4.30	4.25
E	1 .13	3 .40	9 1.21	18 2.42	0 0.00	0 0.00	31 4.17	4.91
ESE	2 .27	6 .81	7 .94	20 2.69	5 .67	0 0.00	40 5.38	5.38
SE	3 .40	6 .81	13 1.75	47 6.32	35 4.70	1 .13	105 14.11	6.46
SSE	5 .67	13 1.75	30 4.03	38 5.11	25 3.36	0 0.00	111 14.92	5.44
S	1 .13	7 .94	31 4.17	62 8.33	25 3.36	4 .54	130 17.47	5.99
SSW	3 .40	4 .54	23 3.09	36 4.84	27 3.63	8 1.08	101 13.58	6.50
SW	1 .13	3 .40	11 1.48	15 2.02	11 1.48	5 .67	46 6.18	6.47
WSW	0 0.00	3 .40	4 .54	2 .27	1 .13	0 0.00	10 1.34	3.98
W	2 .27	5 .67	0 0.00	1 .13	0 0.00	0 0.00	8 1.08	2.43
WNW	2 .27	1 .13	1 .13	2 .27	0 0.00	0 0.00	6 .81	3.32
NW	2 .27	0 0.00	0 0.00	2 .27	2 .27	0 0.00	6 .81	4.90
NNW	4 .54	7 .94	3 .40	0 0.00	0 0.00	0 0.00	14 1.88	2.07
N	1 .13	5 .67	13 1.75	22 2.96	5 .67	6 .81	52 6.99	6.04
CALM	0 0.00						0 0.00	CALM
TOTAL	31 4.17	76 10.22	191 25.67	280 37.63	141 18.95	25 3.36	744 100.00	5.65

NUMBER OF VALID OBSERVATIONS	744	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	744	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-25

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 .89 .28 0	3 1.33 .42 2	1 .44 .14 4	0 0.00 0.00 3	0 0.00 0.00 1	0 0.00 0.00 0	6 2.67 .83 10	4.84
NE	0 0.00 0.00 2	2 .89 .28 4	4 1.78 .56 8	3 1.33 .42 0	1 .44 .14 0	0 0.00 0.00 0	10 4.44 1.39 14	3.11
ENE	2 .89 .28 0	4 1.78 .56 0	8 3.56 1.11 15	0 0.00 0.00 2	0 0.00 0.00 0	0 0.00 0.00 0	14 6.22 1.94 19	3.62
E	0 0.00 0.00 0	5 2.22 .69 5	12 5.33 1.67 5	2 .89 .28 4	0 0.00 0.00 0	0 0.00 0.00 0	19 8.44 2.64 14	3.72
ESE	0 0.00 0.00 2	5 2.22 .69 5	5 2.22 .69 4	4 1.78 .56 7	0 0.00 0.00 0	0 0.00 0.00 0	14 6.22 1.94 23	5.30
SE	2 .89 .28 0	5 2.22 .69 3	4 1.78 .56 3	5 2.22 .69 12	7 3.11 .97 9	0 0.00 0.00 2	23 10.22 3.19 29	6.82
SSE	0 0.00 0.00 1	3 1.33 .42 5	3 1.33 .42 5	12 5.33 1.67 10	9 4.00 1.25 4	2 .89 .28 1	29 12.89 4.03 24	5.09
S	1 .44 .14 1	5 2.22 .69 2	5 2.22 .69 3	10 4.44 1.39 3	4 1.78 .56 0	1 .44 .14 0	24 10.67 3.33 7	3.95
SSW	.44 .14 0	.89 .28 0	3 1.33 .42 3	3 1.33 .42 1	0 0.00 0.00 2	0 0.00 0.00 0	7 3.00 .97 6	5.69
SW	0 0.00 0.00 0	0 0.00 0.00 0	3 1.33 .42 0	1 .44 .14 1	2 .89 .28 0	0 0.00 0.00 0	6 2.67 .83 4	7.46
WSW	0 0.00 0.00 0	0 0.00 0.00 0	0 0.00 0.00 0	1 .44 .14 0	3 1.33 .42 0	0 0.00 0.00 0	4 1.78 .56 0	0.00
W	0 0.00 0.00 0	0 0.00 0.00 0	0 0.00 0.00 1	0 0.00 0.00 1	0 0.00 0.00 0	0 0.00 0.00 0	0 0.00 0.00 2	4.97
WNW	0 0.00 0.00 2	0 0.00 0.00 0	.44 .14 1	.44 .14 2	0.00 0.00 0	0.00 0.00 0	.89 .28 5	3.70
NW	.89 .28 6	0.00 0.00 2	.44 .14 10	.89 .28 11	0.00 0.00 4	0.00 0.00 2	2.22 .69 35	5.08
NNW	2.67 .83 0	.89 .28 4	4.44 1.39 8	4.89 1.53 10	1.78 .56 3	.89 .28 0	15.56 4.85 25	5.10
N	0.00 0.00 0	1.78 .56 0	3.56 1.11 0	4.44 1.39 0	1.33 .42 0	0.00 0.00 0	11.11 3.47 0	CALM
CALM	0.00 0.00 16	38	68	65	33	5	0.00 0.00 225	4.95
TOTAL	7.11 2.22	16.89 5.28	30.22 9.44	28.89 9.03	14.67 4.58	2.22 .69	100.00 31.25	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-26

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1975

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	3 16.67 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 16.67 .42	4.42
ESE	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	1.90
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	1 5.56 .14	7.58
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	6.64
S	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	2 11.11 .28	1 5.56 .14	0 0.00 0.00	4 22.22 .56	5.68
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	2 11.11 .28	4.03
WSW	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	1.42
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	2 11.11 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 11.11 .28	.95
NNW	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	2 11.11 .28	7.82
N	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	4.74
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	3 16.67 .42	3 16.67 .42	5 27.78 .69	4 22.22 .56	2 11.11 .28	1 5.56 .14	18 100.00 2.50	4.66

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-27

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1978

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	4.74
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	1 6.67 .14	0 0.00 0.00	2 13.33 .28	7.82
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	7.11
SSW	0 0.00 0.00	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	2.84
SW	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	2 13.33 .28	0 0.00 0.00	0 0.00 0.00	4 26.67 .56	5.45
WSW	1 6.67 .14	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	1.66
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	.95
NNW	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	4.27
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	1 6.67 .14						1 6.67 .14	CALM
TOTAL	3 20.00 .42	2 13.33 .28	5 33.33 .69	4 26.67 .56	1 6.67 .14	0 0.00 0.00	15 100.00 2.08	4.36

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-28

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .93 .14	3 2.78 .42	1 .93 .14	0 0.00 0.00	5 4.63 .69	5.97
NE	2 1.85 .28	0 0.00 0.00	4 3.70 .56	2 1.85 .28	0 0.00 0.00	0 0.00 0.00	8 7.41 1.11	3.97
ENE	0 0.00 0.00	0 0.00 0.00	3 2.78 .42	1 .93 .14	0 0.00 0.00	0 0.00 0.00	4 3.70 .56	4.62
E	0 0.00 0.00	2 1.85 .28	10 9.26 1.39	3 2.78 .42	0 0.00 0.00	0 0.00 0.00	15 13.89 2.08	4.36
ESE	0 0.00 0.00	1 .93 .14	2 1.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.78 .42	3.63
SE	0 0.00 0.00	0 0.00 0.00	1 .93 .14	0 0.00 0.00	2 1.85 .28	0 0.00 0.00	3 2.78 .42	6.63
SSE	0 0.00 0.00	2 1.85 .28	3 2.78 .42	4 3.70 .56	4 3.70 .56	0 0.00 0.00	13 12.04 1.81	6.02
S	0 0.00 0.00	1 .93 .14	0 0.00 0.00	4 3.70 .56	2 1.85 .28	2 1.85 .28	9 8.33 1.25	7.22
SSW	1 .93 .14	1 .93 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.85 .28	1.89
SW	3 2.78 .42	2 1.85 .28	2 1.85 .28	1 .93 .14	1 .93 .14	0 0.00 0.00	9 8.33 1.25	3.27
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .93 .14	1 .93 .14	0 0.00 0.00	2 1.85 .28	6.88
W	0 0.00 0.00	0 0.00 0.00	1 .93 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .93 .14	4.27
WNW	1 .93 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .93 .14	.47
NW	1 .93 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .93 .14	.95
NNW	1 .93 .14	0 0.00 0.00	3 2.78 .42	9 8.33 1.25	5 4.63 .69	0 0.00 0.00	18 16.67 2.50	6.50
N	1 .93 .14	3 2.78 .42	5 4.63 .69	2 1.85 .28	2 1.85 .28	1 .93 .14	14 12.96 1.94	4.91
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	10 9.26 1.39	12 11.11 1.67	35 32.41 4.86	30 27.78 4.17	18 16.67 2.50	3 2.78 .42	108 100.00 15.00	5.17

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-29

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER 1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	2	1	1	0	4	5.81
	0.00	0.00	1.21	.61	.61	0.00	2.42	
	0.00	0.00	.28	.14	.14	0.00	.56	
NE	0	0	0	7	0	0	7	6.16
	0.00	0.00	0.00	4.24	0.00	0.00	4.24	
	0.00	0.00	0.00	.97	0.00	0.00	.97	
ENE	0	0	8	10	0	0	18	5.35
	0.00	0.00	4.85	6.06	0.00	0.00	10.91	
	0.00	0.00	1.11	1.39	0.00	0.00	2.50	
E	0	2	6	9	0	0	17	4.94
	0.00	1.21	3.64	5.45	0.00	0.00	10.30	
	0.00	.28	.83	1.25	0.00	0.00	2.36	
ESE	0	1	6	10	0	0	17	5.30
	0.00	.61	3.64	6.06	0.00	0.00	10.30	
	0.00	.14	.83	1.39	0.00	0.00	2.36	
SE	0	0	3	11	8	0	22	6.55
	0.00	0.00	1.82	6.67	4.85	0.00	13.33	
	0.00	0.00	.42	1.53	1.11	0.00	3.06	
SSE	0	0	6	5	9	0	20	6.86
	0.00	0.00	3.64	3.03	5.45	0.00	12.12	
	0.00	0.00	.83	.69	1.25	0.00	2.78	
S	1	0	2	14	5	0	23	6.24
	.61	0.00	1.82	8.48	3.03	0.00	13.94	
	.14	0.00	.42	1.94	.69	0.00	3.19	
SSW	0	0	0	1	0	0	1	5.21
	0.00	0.00	0.00	.61	0.00	0.00	.61	
	0.00	0.00	0.00	.14	0.00	0.00	.14	
SW	0	0	2	0	2	0	4	5.57
	0.00	0.00	1.21	0.00	1.21	0.00	2.42	
	0.00	0.00	.28	0.00	.28	0.00	.56	
WSW	0	0	0	1	0	0	1	5.21
	0.00	0.00	0.00	.61	0.00	0.00	.61	
	0.00	0.00	0.00	.14	0.00	0.00	.14	
W	0	1	1	0	0	0	2	3.08
	0.00	.61	.61	0.00	0.00	0.00	1.21	
	0.00	.14	.14	0.00	0.00	0.00	.28	
WNW	0	1	0	0	0	0	1	2.44
	0.00	.61	0.00	0.00	0.00	0.00	.61	
	0.00	.14	0.00	0.00	0.00	0.00	.14	
NW	1	1	2	0	0	0	4	2.61
	.61	.61	1.21	0.00	0.00	0.00	2.42	
	.14	.14	.28	0.00	0.00	0.00	.56	
NNW	0	3	1	4	1	0	9	4.74
	0.00	1.82	.61	2.42	.61	0.00	5.45	
	0.00	.42	.14	.56	.14	0.00	1.25	
N	0	0	7	3	4	1	15	6.23
	0.00	0.00	4.24	1.82	2.42	.61	9.09	
	0.00	0.00	.97	.42	.56	.14	2.08	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	2	9	47	76	30	1	165	5.75
	1.21	5.45	28.48	46.06	18.18	.61	100.00	
	.28	1.25	6.53	10.56	4.17	.14	22.92	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-30

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 1.57 .28	0 0.00 0.00	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.15 .56	2.37
NE	0 0.00 0.00	2 1.57 .28	1 .79 .14	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	5 3.94 .69	3.98
ENE	1 .79 .14	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.36 .42	2.21
E	0 0.00 0.00	1 .79 .14	1 .79 .14	2 1.57 .28	1 .79 .14	0 0.00 0.00	5 3.94 .69	3.31
ESE	0 0.00 0.00	0 0.00 0.00	1 .79 .14	5 3.94 .69	0 0.00 0.00	0 0.00 0.00	6 4.72 .83	6.00
SE	0 0.00 0.00	1 .79 .14	4 3.15 .56	0 0.00 0.00	1 .79 .14	0 0.00 0.00	6 4.72 .83	4.52
SSE	0 0.00 0.00	1 .79 .14	0 0.00 0.00	5 4.72 .83	5 4.72 .83	0 0.00 0.00	13 10.24 1.81	6.71
S	2 1.57 .28	2 1.57 .28	4 3.15 .56	10 7.87 1.39	2 1.57 .28	1 .79 .14	21 16.54 2.92	5.30
SSW	0 0.00 0.00	2 1.57 .28	10 7.87 1.39	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	15 11.81 2.08	4.42
SW	0 0.00 0.00	0 0.00 0.00	3 2.36 .42	6 4.72 .83	2 1.57 .28	0 0.00 0.00	11 8.66 1.53	5.95
WSW	1 .79 .14	2 1.57 .28	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 3.94 .69	2.66
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	2 1.57 .28	5.92
WNW	0 0.00 0.00	0 0.00 0.00	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.36 .42	4.43
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	5 3.94 .69	4 3.15 .56	6 4.72 .83	0 0.00 0.00	0 0.00 0.00	15 11.81 2.08	4.17
N	2 1.57 .28	1 .79 .14	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 4.72 .83	2.92
CALM	7 5.51 .97						7 5.51 .97	CALM
TOTAL	15 11.81 2.08	19 14.96 2.64	38 29.92 5.28	42 33.07 5.83	12 9.45 1.67	1 .79 .14	127 100.00 17.64	4.64

KEY xxx NUMBER OF OCCURRENCES
xxx PERCENT OCCURRENCES THIS CLASS
xxx PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-31

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	1 1.61 .14	8.06
NE	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	5.21
ENE	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	4.90
E	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	5.22
ESE	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	3.79
SE	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	5.06
SSE	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	4.11
S	0 0.00 0.00	2 3.23 .28	5 8.06 .69	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	8 12.90 1.11	3.97
SSW	0 0.00 0.00	2 3.23 .28	6 9.68 .83	5 8.06 .69	1 1.61 .14	0 0.00 0.00	14 22.58 1.94	4.84
SW	0 0.00 0.00	0 0.00 0.00	4 6.45 .56	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	7 11.29 .97	5.01
WSW	0 0.00 0.00	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	2.21
W	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	.47
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	5.69
NW	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	4.27
NNW	1 1.61 .14	1 1.61 .14	2 3.23 .28	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	6 9.68 .83	4.03
N	0 0.00 0.00	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	2.68
CALM	2 3.23 .28						2 3.23 .28	CALM
TOTAL	4 6.45 .56	11 17.74 1.53	28 45.16 3.89	17 27.42 2.36	2 3.23 .28	0 0.00 0.00	62 100.00 8.61	4.27

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-32

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96,93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	4 .56	3 .42	6 .83	4 .56	3 .42	0 0.00	20 2.78	4.10
NE	2 .28	4 .56	10 1.39	15 2.08	1 .14	0 0.00	32 4.44	4.80
ENE	3 .42	6 .83	21 2.92	12 1.67	0 0.00	0 0.00	42 5.83	4.28
E	0 0.00	10 1.39	35 4.86	17 2.36	1 .14	0 0.00	63 8.75	4.41
ESE	0 0.00	8 1.11	15 2.08	19 2.64	0 0.00	0 0.00	42 5.83	4.54
SE	2 .28	6 .83	14 1.94	17 2.36	19 2.64	0 0.00	58 8.06	5.82
SSE	0 0.00	6 .83	15 2.08	29 4.03	29 4.03	2 .28	81 11.25	6.39
S	4 .56	8 1.11	18 2.50	42 5.83	14 1.94	4 .56	90 12.50	5.76
SSW	2 .28	8 1.11	19 2.64	12 1.67	1 .14	0 0.00	42 5.83	4.32
SW	3 .42	3 .42	16 2.22	14 1.94	7 .97	6 0.00	43 5.97	5.03
WSW	3 .42	6 .83	2 .28	3 .42	4 .56	0 0.00	18 2.50	4.08
W	1 .15	1 .14	2 .28	2 .28	0 0.00	0 0.00	6 .83	3.79
WNW	1 .14	1 .14	4 .56	3 .42	0 0.00	0 0.00	9 1.25	4.21
NW	7 .97	1 .14	4 .56	2 .28	0 0.00	0 0.00	14 1.94	2.64
NNW	8 1.11	12 1.67	21 2.92	32 4.44	10 1.39	3 .42	86 11.94	5.17
N	3 .42	11 1.53	24 3.33	15 2.08	9 1.25	2 .28	64 8.89	5.00
CALM	10 1.39						10 1.39	CALM
TOTAL	53 7.36	94 13.06	226 31.39	238 33.06	98 13.61	11 1.53	720 100.00	5.01

NUMBER OF VALID OBSERVATIONS	720	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	720	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-33

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 3.03 .27	1 1.52 .13	3 4.55 .40	0 0.00 0.00	0 0.00 0.00	6 9.09 .81	4.27
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	1 1.52 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	2.84
NW	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	2 3.03 .27	1 1.52 .13	0 0.00 0.00	4 6.06 .54	6.04
NNW	1 1.52 .13	0 0.00 0.00	7 10.61 .94	13 19.70 1.75	7 10.61 .94	3 4.55 .40	31 46.97 4.17	6.67
N	0 0.00 0.00	2 3.03 .27	4 6.06 .54	17 25.76 2.28	1 1.52 .13	0 0.00 0.00	24 36.36 3.23	5.65
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 1.52 .13	5 7.58 .67	13 19.70 1.75	35 53.03 4.70	9 13.64 1.21	3 4.55 .40	66 100.00 8.87	5.98

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-34

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	5.69
NE	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	4.27
ENE	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	.47
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	2.84
SE	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	2 6.25 .27	4.74
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	1 3.13 .13	1 3.13 .13	0 0.00 0.00	2 6.25 .27	7.11
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	3 9.38 .40	1 3.13 .13	5 15.63 .67	8.62
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	3.79
WNW	2 6.25 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.25 .27	.71
NW	1 3.13 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 .13	.45
NNW	1 3.13 .13	3 9.38 .40	1 3.13 .13	1 3.13 .13	2 6.25 .27	0 0.00 0.00	8 25.00 1.08	4.21
N	0 0.00 0.00	0 0.00 0.00	2 6.25 .07	3 9.38 .40	1 3.13 .13	0 0.00 0.00	6 18.75 .81	5.61
CALM	1 3.13 .13						1 3.13 .13	CALM
TOTAL	6 18.75 .81	5 15.63 .67	5 15.63 .67	8 25.00 1.08	7 21.88 .94	1 3.13 .13	32 100.00 4.30	4.80

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-35

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 1.85 .13	1 1.85 .13	1 1.85 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.56 .40	2.21
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	1 1.85 .13	1 1.85 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.70 .27	3.31
SE	0 0.00 0.00	2 3.70 .27	2 3.70 .27	0 0.00 0.00	1 1.85 .13	0 0.00 0.00	5 9.26 .67	3.74
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	1 1.85 .13	1 1.85 .13	0 0.00 0.00	2 3.70 .27	4 7.41 .54	8.30
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.70 .27	0 0.00 0.00	0 0.00 0.00	2 3.70 .27	7.11
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.70 .27	3 5.56 .40	3 5.56 .40	8 14.81 1.08	8.77
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	3 5.56 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.56 .40	1.10
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	2 3.70 .27	0 0.00 0.00	2 3.70 .27	2 3.70 .27	1 1.85 .13	1 1.85 .13	8 14.81 1.08	5.39
N	2 3.70 .27	0 0.00 0.00	6 11.11 .81	8 14.81 1.08	2 3.70 .27	0 0.00 0.00	18 33.33 2.42	4.90
CALM	1 1.85 .13						1 1.85 .13	CALM
TOTAL	9 16.67 1.21	4 7.41 .54	13 24.07 1.75	15 27.78 2.02	7 12.96 .94	6 11.11 .81	54 100.00 7.26	5.27

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-36

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96,93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7435-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .36 .13	3 1.08 .40	12 4.30 1.61	5 1.79 .67	1 .36 .13	0 0.00 0.00	22 7.89 2.96	4.22
NE	0 0.00 0.00	1 .36 .13	5 1.79 .67	3 1.08 .40	1 .36 .13	0 0.00 0.00	10 3.58 1.35	5.08
ENE	2 .72 .27	5 1.79 .67	5 1.79 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	12 4.30 1.61	3.57
E	1 .36 .13	5 1.79 .67	8 2.87 1.08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	14 5.02 1.88	3.32
ESE	0 0.00 0.00	2 .72 .27	5 1.79 .67	11 3.94 1.48	0 0.00 0.00	0 0.00 0.00	18 6.45 2.42	5.13
SE	2 .72 .27	3 1.08 .40	4 1.43 .54	10 3.58 1.34	3 1.08 .40	0 0.00 0.00	22 7.89 2.96	4.93
SSE	1 .36 .13	5 1.79 .67	5 1.79 .67	2 .72 .27	0 0.00 0.00	0 0.00 0.00	13 4.66 1.75	3.39
S	1 .36 .13	4 1.43 .54	5 1.79 .67	4 1.43 .54	0 0.00 0.00	0 0.00 0.00	14 5.02 1.88	4.27
SSW	0 0.00 0.00	1 .36 .13	2 .72 .27	6 2.15 .81	3 1.08 .40	1 .36 .13	13 4.66 1.75	.38
SW	0 0.00 0.00	1 .36 .13	2 .72 .27	5 1.79 .67	10 3.58 1.34	4 1.43 .54	22 7.89 2.96	7.89
WSW	0 0.00 0.00	0 0.00 0.00	1 .36 .13	1 .36 .13	0 0.00 0.00	0 0.00 0.00	2 .72 .27	4.98
W	3 1.08 .40	3 1.08 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 2.15 .81	1.66
WNW	1 .36 .13	2 .72 .27	1 .36 .13	2 .72 .27	0 0.00 0.00	0 0.00 0.00	6 2.15 .81	3.71
NW	0 0.00 0.00	0 0.00 0.00	7 2.51 .94	4 1.43 .54	1 .36 .13	0 0.00 0.00	12 4.30 1.61	5.02
NNW	1 .36 .13	3 1.08 .40	4 1.43 .54	12 4.30 1.61	7 2.51 .94	0 0.00 0.00	27 9.68 3.63	5.86
N	0 0.00 0.00	4 1.43 .54	17 6.09 2.28	34 12.19 4.57	1 .36 .13	1 .36 .13	57 20.43 7.66	5.28
CALM	2 4.30 1.61						12 4.30 1.61	CALM
TOTAL	25 8.96 3.36	42 15.05 5.65	80 28.67 10.75	99 35.48 13.31	27 9.68 3.63	6 2.15 .81	279 100.00 37.50	4.76

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-37

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 .76 .13	2 1.52 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.27 .40	3.32
NE	0 0.00 0.00	3 2.27 .40	3 2.27 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 4.55 .81	3.00
ENE	0 0.00 0.00	1 .76 .13	3 2.27 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.03 .54	3.32
E	1 .76 .13	5 1.52 .27	4 3.03 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 5.30 .94	2.98
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.27 .40	1 .76 .13	0 0.00 0.00	4 3.03 .54	6.64
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.27 .40	4 3.03 .54	0 0.00 0.00	7 5.30 .94	7.52
SSE	0 0.00 0.00	4 3.03 .54	0 0.00 0.00	2 1.52 .27	2 1.52 .27	0 0.00 0.00	8 6.06 1.08	4.86
S	1 .76 .13	2 1.52 .27	2 1.52 .27	2 1.52 .27	9 6.82 1.21	0 0.00 0.00	16 12.12 2.15	6.28
SSW	1 .76 .13	1 .76 .13	1 .76 .13	7 5.30 .94	6 4.55 .81	0 0.00 0.00	16 12.12 2.15	6.34
SW	0 0.00 0.00	0 0.00 0.00	1 .76 .13	4 3.03 .54	0 0.00 0.00	0 0.00 0.00	5 3.79 .67	6.16
WSW	0 0.00 0.00	0 0.00 0.00	1 .76 .13	1 .76 .13	0 0.00 0.00	0 0.00 0.00	2 1.52 .27	5.45
W	2 1.52 .27	0 0.00 0.00	1 .76 .13	2 1.52 .27	0 0.00 0.00	0 0.00 0.00	5 3.79 .67	3.51
WNW	0 0.00 0.00	0 0.00 0.00	1 .76 .13	1 1.52 .27	0 0.00 0.00	0 0.00 0.00	2 1.52 .27	5.37
NW	0 0.00 0.00	1 .76 .13	0 0.00 0.00	2 1.52 .27	1 .76 .13	0 0.00 0.00	4 3.03 .54	3.57
NNW	0 0.00 0.00	1 .76 .13	4 3.03 .54	15 11.36 2.02	2 1.52 .27	0 0.00 0.00	22 16.67 2.96	5.97
N	0 0.00 0.00	1 .76 .13	5 3.79 .67	4 3.03 .54	5 3.79 .67	0 0.00 0.00	15 11.36 2.02	5.78
CALM	5 3.79 .67						5 3.79 .67	CALM
TOTAL	10 7.58 1.34	17 12.88 2.28	28 21.21 3.76	47 35.61 6.32	30 22.73 4.03	0 0.00 0.00	132 100.00 17.74	5.29

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-38

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	3.79
NE	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	3.79
ENE	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	1.90
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	2 2.82 .27	1 1.41 .13	0 0.00 0.00	4 5.63 .54	6.40
SSE	0 0.00 0.00	0 0.00 0.00	3 4.23 .40	6 8.45 .81	0 0.00 0.00	0 0.00 0.00	9 12.68 1.21	5.37
S	0 0.00 0.00	2 2.82 .27	4 5.63 .54	5 7.04 .67	2 2.82 .27	1 1.41 .13	14 19.72 1.88	5.65
SSW	0 0.00 0.00	0 0.00 0.00	2 2.82 .27	7 9.86 .94	0 0.00 0.00	0 0.00 0.00	9 12.68 1.21	5.79
SW	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	4 5.63 .54	4 5.63 .54	0 0.00 0.00	9 12.68 1.21	6.90
WSW	1 1.41 .13	0 0.00 0.00	1 1.41 .13	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	3 4.23 .40	3.64
W	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	2 2.82 .27	4.50
WNW	0 0.00 0.00	0 0.00 0.00	3 4.23 .40	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	4 5.63 .54	5.69
NW	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	2 2.82 .27	4.74
NNW	0 0.00 0.00	2 2.82 .27	2 2.82 .27	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	6 8.45 .81	4.42
N	1 1.41 .13	0 0.00 0.00	1 1.41 .13	4 5.63 .54	0 0.00 0.00	0 0.00 0.00	6 8.45 .81	4.50
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 2.82 .27	7 9.86 .94	20 28.17 2.69	33 46.48 4.44	7 9.86 .94	2 2.82 .27	71 100.00 9.54	5.39

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-39

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1	2	1	0	0	0	4	2.72
	.91	1.82	.91	0.00	0.00	0.00	3.64	
	.13	.27	.13	0.00	0.00	0.00	.54	
NE	5	4	4	0	0	0	13	2.37
	4.55	3.64	3.64	0.00	0.00	0.00	11.82	
	.67	.54	.54	0.00	0.00	0.00	1.75	
ENE	1	2	4	0	0	0	7	3.32
	.91	1.82	3.64	0.00	0.00	0.00	6.36	
	.13	.27	.54	0.00	0.00	0.00	.94	
E	2	0	0	0	0	0	2	1.18
	1.82	0.00	0.00	0.00	0.00	0.00	1.82	
	.27	0.00	0.00	0.00	0.00	0.00	.27	
ESE	2	1	0	0	0	0	3	1.58
	1.82	.91	0.00	0.00	0.00	0.00	2.73	
	.27	.13	0.00	0.00	0.00	0.00	.40	
SE	0	4	2	5	2	0	13	5.07
	0.00	3.64	1.82	4.55	1.82	0.00	11.82	
	0.00	.54	.27	.67	.27	0.00	1.75	
SSE	0	7	4	8	0	0	19	4.22
	0.00	6.36	3.64	7.27	0.00	0.00	17.27	
	0.00	.94	.54	1.08	0.00	0.00	2.55	
S	0	0	6	3	0	0	9	4.64
	0.00	0.00	5.45	2.73	0.00	0.00	8.18	
	0.00	0.00	.81	.40	0.00	0.00	1.21	
SSW	0	1	0	0	0	0	1	2.64
	0.00	.91	0.00	0.00	0.00	0.00	.91	
	0.00	.13	0.00	0.00	0.00	0.00	.13	
SW	0	0	7	1	0	0	8	4.56
	0.00	0.00	5.45	1.82	0.00	0.00	7.27	
	0.00	0.00	.81	.27	0.00	0.00	1.08	
WSW	0	3	2	0	0	0	5	3.32
	0.00	2.73	1.82	0.00	0.00	0.00	4.55	
	0.00	.40	.27	0.00	0.00	0.00	.67	
W	0	5	2	2	0	0	9	3.53
	0.00	4.55	1.82	1.82	0.00	0.00	8.18	
	0.00	.67	.27	.27	0.00	0.00	1.21	
WNW	0	0	0	2	0	0	2	6.16
	0.00	0.00	0.00	1.82	0.00	0.00	1.82	
	0.00	0.00	0.00	.27	0.00	0.00	.27	
NW	0	1	1	1	0	0	3	6.40
	0.00	.91	.91	.91	0.00	.91	2.73	
	0.00	.13	.13	.13	0.00	.13	.40	
NNW	0	0	2	1	0	0	3	4.26
	0.00	0.00	1.82	.91	0.00	0.00	2.73	
	0.00	0.00	.27	.13	0.00	0.00	.40	
N	1	1	4	1	0	0	7	3.45
	.91	.91	3.64	.91	0.00	0.00	6.36	
	.13	.13	.54	.13	0.00	0.00	.94	
CALM	2						2	CALM
	1.82						1.82	
	.27						.27	
TOTAL	14	30	38	25	2	1	110	3.78
	12.73	27.27	34.55	22.73	1.82	.91	100.00	
	1.88	4.03	5.11	3.36	.27	.13	14.78	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-40

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	3 .40	9 1.21	18 2.42	9 1.21	1 .13	0 0.00	40 5.38	3.89
NE	5 .67	8 1.08	11 1.48	3 .40	1 .13	0 0.00	28 3.76	3.30
ENE	4 .54	9 1.21	12 1.61	0 0.00	0 0.00	0 0.00	25 3.36	2.79
E	4 .54	7 .94	12 1.61	0 0.00	0 0.00	0 0.00	23 3.09	3.03
ESE	2 .27	5 .67	6 .81	14 1.88	1 .13	0 0.00	28 3.76	4.76
SE	2 .27	10 1.34	9 1.21	21 2.82	11 1.48	0 0.00	53 7.12	5.30
SSE	1 .13	16 2.15	12 1.61	18 2.42	2 .27	0 0.00	49 6.59	4.31
S	2 .27	8 1.08	18 2.42	16 2.15	12 1.61	3 .40	59 7.93	5.57
SSW	1 .13	3 .40	5 .67	22 2.96	9 1.21	1 .13	41 5.51	6.19
SW	0 0.00	1 .13	10 1.34	18 2.42	20 2.69	8 1.08	57 7.66	7.30
WSW	1 .13	3 .40	5 .67	3 .40	0 0.00	0 0.00	12 1.61	4.03
W	8 1.08	9 1.21	4 .54	5 .67	0 0.00	0 0.00	26 3.49	2.90
WNW	3 .40	3 .40	5 .67	6 .81	0 0.00	1 .13	18 2.42	4.02
NW	1 .13	2 .27	9 1.21	10 1.34	3 .40	1 .13	26 3.49	5.24
NNW	5 .67	9 1.21	22 2.96	46 6.18	19 2.55	4 .54	105 14.11	5.84
N	4 .54	8 1.08	39 5.24	71 9.54	10 1.34	1 .13	133 17.88	5.24
CALM	21 2.82						21 2.82	CALM
TOTAL	67 9.01	110 14.78	197 26.48	262 35.22	89 11.96	19 2.55	744 100.00	4.92

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-41

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 1.45 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.45 .14	3.32
WNW	0 0.00 0.00	0 0.00 0.00	3 4.35 .42	1 1.45 .14	0 0.00 0.00	0 0.00 0.00	4 5.80 .56	4.38
NW	1 1.45 .14	0 0.00 0.00	4 5.80 .56	3 4.35 .42	7 10.14 .97	3 4.35 .42	18 26.09 2.50	6.95
NNW	0 0.00 0.00	2 2.90 .28	6 8.70 .83	15 21.74 2.08	11 15.94 1.53	1 1.45 .14	35 50.72 4.86	6.47
N	0 0.00 0.00	0 0.00 0.00	2 2.90 .28	5 7.25 .69	3 4.35 .42	0 0.00 0.00	10 14.49 1.39	6.73
CALM	1 1.45 .14						1 1.45 .14	CALM
TOTAL	2 2.90 .28	2 2.90 .28	16 23.19 2.22	24 34.78 3.33	21 30.43 2.92	4 5.80 .56	69 100.00 9.58	6.37

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-42

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER, 1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	4.27
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.13 .28	0 0.00 0.00	2 5.13 .28	7.58
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.13 .28	2 5.13 .28	11.14
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	2 5.13 .28	0 0.00 0.00	0 0.00 0.00	3 7.69 .42	5.37
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	1 2.56 .14	0 0.00 0.00	2 5.13 .28	6.40
NW	1 2.56 .14	0 0.00 0.00	3 7.69 .42	3 7.69 .42	2 5.13 .28	4 10.26 .56	13 33.33 1.81	7.40
NNW	0 0.00 0.00	1 2.56 .14	2 5.13 .28	4 10.26 .56	2 5.13 .28	0 0.00 0.00	9 23.08 1.25	5.40
N	2 5.13 .28	1 2.56 .14	1 2.56 .14	1 2.56 .14	2 5.13 .28	0 0.00 0.00	7 17.95 .97	4.57
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	3 7.69 .42	2 5.13 .28	8 20.51 1.11	11 28.21 1.53	9 23.08 1.25	6 15.38 .83	39 100.00 5.42	6.48

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-43

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/79. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.26 .28	2 4.26 .28	4 8.51 .56	9.48
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	1 2.13 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.13 .14	2.71
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.38 .42	0 0.00 0.00	0 0.00 0.00	3 6.38 .42	5.53
SSW	0 0.00 0.00	0 0.00 0.00	1 2.13 .14	1 2.13 .14	2 4.26 .28	6 12.77 .83	10 21.28 1.39	9.62
SW	0 0.00 0.00	0 0.00 0.00	1 2.13 .14	0 0.00 0.00	0 0.00 0.00	1 2.13 .14	2 4.26 .28	8.04
WSW	0 0.00 0.00	1 2.13 .14	1 2.13 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.26 .28	3.79
W	1 2.13 .14	1 2.13 .14	2 4.26 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 8.51 .56	2.84
WNW	1 2.13 .14	2 4.26 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.38 .42	1.90
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.13 .14	1 2.13 .14	2 4.26 .28	10.40
NNW	0 0.00 0.00	1 2.13 .14	1 2.13 .14	0 0.00 0.00	1 2.13 .14	4 8.51 .56	7 14.89 .97	9.28
N	0 0.00 0.00	1 2.13 .14	1 2.13 .14	6 12.77 .83	1 2.13 .14	1 2.13 .14	10 21.28 1.39	6.71
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 4.26 .28	7 14.89 .97	7 14.89 .97	10 21.28 1.39	6 12.77 .83	15 31.91 2.08	47 100.00 6.53	7.17

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-44

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .43 .14	0 0.00 0.00	5 2.17 .69	3 1.30 .42	7 3.04 .97	2 .87 .28	18 7.83 2.50	6.58
NE	0 0.00 0.00	4 1.74 .56	1 .43 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.17 .69	2.94
ENE	1 .43 .14	2 .87 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.30 .42	1.58
E	3 1.30 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.30 .42	.95
ESE	1 .43 .14	0 0.00 0.00	0 0. 0.	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .43 .14	.45
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	1 .43 .14	1 .43 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .87 .24	1.66
S	5 2.17 .69	4 1.74 .56	2 .87 .28	7 3.04 .97	2 .87 .28	0 0.00 0.00	20 8.70 2.78	4.27
SSW	0 0.00 0.00	3 1.30 .42	4 1.74 .56	5 2.17 .69	5 2.17 .69	1 .43 .14	18 7.83 2.50	6.06
SW	0 0.00 0.00	4 1.74 .56	6 2.61 .83	4 1.74 .56	2 .87 .28	2 .87 .28	18 7.83 2.50	5.42
WSW	2 .87 .28	2 .87 .28	1 .43 .14	1 .43 .14	3 1.30 .42	0 0.00 0.00	9 3.91 1.25	4.58
W	2 .87 .28	0 0.00 0.00	3 1.30 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.17 .69	2.41
WNW	0 0.00 0.00	2 .87 .28	0 0.00 0.00	7 3.04 .97	1 .43 .14	0 0.00 0.00	10 4.35 1.39	5.40
NW	1 .43 .14	3 1.30 .42	5 2.17 .69	10 4.35 1.39	14 6.09 1.94	1 .43 .14	34 14.78 4.72	6.72
NNW	1 .43 .14	0 0.00 0.00	4 1.74 .56	20 8.70 2.78	18 7.83 2.50	5 2.17 .69	48 20.87 6.67	7.56
N	5 .87 .28	3 1.30 .42	5 2.17 .69	14 6.09 1.94	4 1.74 .56	7 3.04 .97	35 15.22 4.86	6.93
CALM	1 .43 .14						1 .43 .14	CALM
TOTAL	21 9.13 2.92	28 12.17 3.89	36 15.65 5.00	71 30.87 9.86	56 24.35 7.78	18 7.83 2.50	230 100.00 31.94	6.00

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-45

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 46.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 .53 .14	1 .53 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.06 .28	2.84
NE	1 .53 .14	1 .53 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.06 .28	1.66
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 .53 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .53 .14	1.42
ESE	0 0.00 0.00	0 0.00 0.00	1 .53 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .53 .14	3.32
SE	1 .53 .14	5 2.65 .69	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 3.17 .83	2.13
SSE	0 0.00 0.00	0 0.00 0.00	2 1.06 .28	1 .53 .14	0 0.00 0.00	0 0.00 0.00	3 1.59 .42	4.42
S	0 0.00 0.00	1 .53 .14	6 3.17 .83	9 4.76 1.25	3 1.59 .42	0 0.00 0.00	19 10.05 2.64	5.44
SSW	1 .53 .14	0 0.00 0.00	2 1.06 .28	7 3.70 .97	3 3.70 .97	0 0.00 0.00	13 8.99 2.36	6.29
SW	1 .53 .14	0 0.00 0.00	1 .53 .14	8 4.23 1.11	2 1.06 .28	0 0.00 0.00	12 6.35 1.67	5.91
WSW	0 0.00 0.00	3 1.59 .42	5 2.65 .69	6 3.17 .83	6 3.17 .83	0 0.00 0.00	20 10.58 2.78	5.81
W	0 0.00 0.00	5 2.65 .69	6 3.17 .83	5 2.65 .69	3 1.59 .42	0 0.00 0.00	19 10.05 2.64	4.82
WNW	0 0.00 0.00	2 1.06 .28	5 2.65 .69	18 9.52 2.50	3 1.59 .42	0 0.00 0.00	28 14.81 3.89	5.87
NW	2 1.06 .28	2 1.06 .28	4 2.12 .56	9 4.76 1.25	4 4.76 1.25	1 .53 .14	27 14.29 3.75	6.07
NNW	0 0.00 0.00	3 1.59 .42	1 .53 .14	7 3.70 .97	9 4.76 1.25	0 0.00 0.00	20 10.58 2.78	6.61
N	2 1.06 .28	3 1.59 .42	1 .53 .14	1 .53 .14	2 1.06 .28	0 0.00 0.00	9 4.76 1.25	4.16
CALM	3 1.59 .42						3 1.59 .42	CALM
TOTAL	12 6.35 1.67	26 13.76 3.61	35 18.52 4.86	71 37.57 9.86	44 23.28 6.11	1 .53 .14	189 100.00 26.25	5.43

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-46

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .88 .14	4.27
NE	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .88 .14	.47
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	1 .88 .14	2 1.77 .28	0 0.00 0.00	0 0.00 0.00	3 2.65 .42	4.90
S	0 0.00 0.00	1 .88 .14	15 13.27 2.08	8 7.08 1.11	1 .88 .14	0 0.00 0.00	25 22.12 3.47	4.97
SSW	0 0.00 0.00	1 .88 .14	8 7.08 1.11	15 13.27 2.08	1 .88 .14	0 0.00 0.00	25 22.12 3.47	5.38
SW	0 0.00 0.00	2 1.77 .28	7 6.19 .97	2 1.77 .28	8 7.08 1.11	0 0.00 0.00	19 16.81 2.64	6.01
WSW	0 0.00 0.00	2 1.77 .28	2 1.77 .28	1 .88 .14	2 1.77 .28	0 0.00 0.00	7 6.19 .97	5.35
W	0 0.00 0.00	0 0.00 0.00	2 1.77 .28	0 0.00 0.00	2 1.77 .28	0 0.00 0.00	4 3.54 .56	6.28
WNW	0 0.00 0.00	0 0.00 0.00	1 .88 .14	1 .88 .14	0 0.00 0.00	4 3.54 .56	6 5.31 .83	8.93
NW	1 .88 .14	1 .88 .14	0 0.00 0.00	4 3.54 .56	1 .88 .14	1 .88 .14	8 7.08 1.11	5.81
NNW	6 5.31 .83	0 0.00 0.00	2 1.77 .28	1 .88 .14	0 0.00 0.00	0 0.00 0.00	9 7.96 1.25	2.27
N	3 2.65 .42	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.54 .56	1.19
CALM	1 .88 .14						1 .88 .14	CALM
TOTAL	12 10.62 1.67	8 7.08 1.11	39 34.51 5.42	34 30.09 4.72	15 13.27 2.08	5 4.42 .69	113 100.00 15.64	5.13

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-47

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	.95
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	1 3.03 .14	2 6.06 .28	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	4 12.12 .56	4.15
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	5 15.15 .69	0 0.00 0.00	6 18.18 .83	7.27
WSW	0 0.00 0.00	3 9.09 .42	2 6.06 .28	2 6.06 .28	0 0.00 0.00	0 0.00 0.00	7 21.21 .97	4.20
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 9.09 .42	0 0.00 0.00	3 9.09 .42	8.53
WNW	0 0.00 0.00	0 0.00 0.00	3 9.09 .42	2 6.06 .28	0 0.00 0.00	0 0.00 0.00	5 15.15 .69	4.93
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	5.69
NNW	0 0.00 0.00	2 6.06 .28	4 12.12 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 18.18 .83	3.40
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 3.03 .14	6 18.18 .83	12 36.36 1.67	6 18.18 .83	8 24.24 1.11	0 0.00 0.00	33 100.00 4.58	5.06

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-48

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .14	1 .14	8 1.11	3 .42	9 1.25	4 .56	26 3.61	6.56
NE	2 .28	5 .69	1 .14	0 0.00	0 0.00	0 0.00	8 1.11	2.31
ENE	1 .14	3 .42	0 0.00	0 0.00	0 0.00	0 0.00	4 .56	1.86
E	5 .69	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5 .69	1.04
ESE	1 .14	0 0.00	1 .14	0 0.00	0 0.00	0 0.00	2 .28	2.13
SE	1 .14	5 .69	0 0.00	0 0.00	0 0.00	0 0.00	6 .83	2.13
SSE	1 .14	1 .14	3 .42	3 .42	0 0.00	0 0.00	8 1.11	3.91
S	5 .69	7 .97	25 3.47	28 3.89	8 1.11	0 0.00	73 10.14	4.95
SSW	1 .14	4 .56	15 2.08	28 3.89	15 2.08	9 1.25	72 10.00	6.51
SW	1 .14	6 .83	16 2.22	14 1.94	17 2.36	3 .42	57 7.92	6.01
WSW	2 .28	11 1.53	11 1.53	10 1.39	11 1.53	0 0.00	45 6.25	5.15
W	3 .42	6 .83	15 2.08	7 .97	8 1.11	0 0.00	39 5.42	4.80
WNW	1 .14	6 .83	12 1.67	30 4.17	5 .69	4 .56	58 8.06	5.74
NW	6 .83	6 .83	16 2.22	30 4.17	33 4.58	11 1.53	102 14.17	6.64
NNW	7 .97	9 1.25	20 2.78	47 6.53	41 5.69	10 1.39	134 18.61	6.57
N	9 1.25	9 1.25	10 1.39	27 3.75	12 1.67	8 1.11	75 10.42	6.02
CALM	6 .83						6 .83	CALM
TOTAL	53 7.36	79 10.97	153 21.25	227 31.53	159 22.08	49 6.81	720 100.00	5.81

NUMBER OF VALID OBSERVATIONS 720 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 .00 PCT.
TOTAL NUMBER OF OBSERVATIONS 720 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

TABLE 5-49

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 46.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	0	0	1	2	3	11.38
	0.00	0.00	0.00	0.00	1.39	2.78	4.17	
	0.00	0.00	0.00	0.00	.13	.27	.40	
NE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WSW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
W	0	0	1	1	0	0	2	4.98
	0.00	0.00	1.39	1.39	0.00	0.00	2.78	
	0.00	0.00	.13	.13	0.00	0.00	.27	
WNW	0	0	1	1	0	0	2	4.74
	0.00	0.00	1.39	1.39	0.00	0.00	2.78	
	0.00	0.00	.13	.13	0.00	0.00	.27	
NW	0	2	0	4	5	6	18	8.98
	0.00	2.78	0.00	5.56	8.33	8.33	25.00	
	0.00	.27	0.00	.54	.81	.81	2.42	
NNW	0	1	2	1	8	5	17	8.45
	0.00	1.39	2.78	1.39	11.11	6.94	23.61	
	0.00	.13	.27	.13	1.08	.67	2.28	
N	0	2	2	2	17	7	30	8.04
	0.00	2.78	2.78	2.78	23.61	9.72	41.67	
	0.00	.27	.27	.27	2.28	.94	4.03	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	5	6	9	32	20	72	8.33
	0.00	6.94	8.33	12.50	44.44	27.78	100.00	
	0.00	.67	.81	1.21	4.30	2.69	9.68	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-50

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .13	0 0.00 0.00	1 2.00 .13	8.53
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	1 2.00 .13	1 2.00 .13	2 4.00 .27	1 2.00 .13	0 0.00 0.00	5 10.00 .67	5.40
NW	0 0.00 0.00	0 0.00 0.00	3 6.00 .40	0 0.00 0.00	2 4.00 .27	0 0.00 0.00	5 10.00 .67	5.97
NNW	0 0.00 0.00	3 6.00 .40	0 0.00 0.00	2 4.00 .27	2 4.00 .27	3 6.00 .40	10 20.00 1.34	7.58
N	0 0.00 0.00	0 0.00 0.00	5 10.00 .67	3 6.00 .40	8 16.00 1.08	13 26.00 1.75	29 58.00 3.90	9.45
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	4 8.00 .54	9 18.00 1.21	7 14.00 .94	14 28.00 1.88	16 32.00 2.15	50 100.00 6.72	8.30

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-51

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	3 5.26 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.26 .40	3.95
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	1 1.75 .13	4 7.02 .54	2 3.51 .27	1 1.75 .13	8 14.04 1.08	7.23
SW	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	3 5.26 .40	0 0.00 0.00	0 0.00 0.00	5 8.77 .67	5.31
WSW	0 0.00 0.00	0 0.00 0.00	1 1.75 .13	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	5.45
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	1 1.75 .13	1 1.75 .13	3 5.26 .40	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	6 10.53 .81	3.48
NW	0 0.00 0.00	2 3.51 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	2.37
NNW	1 1.75 .13	0 0.00 0.00	1 1.75 .13	1 1.75 .13	2 3.51 .27	3 5.26 .40	8 14.04 1.08	7.64
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 10.53 .81	2 3.51 .27	6 10.53 .81	14 24.56 1.88	10.02
CALM	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	5 8.77 .67	2 3.51 .27	9 15.79 1.21	9.06
TOTAL	2 3.51 .27	3 5.26 .40	11 19.30 1.48	18 31.58 2.42	11 19.30 1.48	12 21.05 1.61	0 0.00 0.00 57 100.00 7.66	CALM 7.29

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-52

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND): 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .44 .13	2 .87 .27	1 .44 .13	0 0.00 0.00	1 .44 .13	0 0.00 0.00	5 2.18 .67	3.79
NE	1 .44 .13	3 1.31 .40	2 .87 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 2.62 .81	2.84
ENE	0 0.00 0.00	1 .44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .44 .13	1.90
E	1 .44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .44 .13	1.42
ESE	5 2.18 .67	1 .44 .13	0 0.00 0.00	5 2.18 .67	2 .87 .27	0 0.00 0.00	10 4.37 1.34	5.12
SE	2 .87 .27	5 2.18 .67	6 2.62 .81	3 1.31 .40	2 .87 .27	0 0.00 0.00	18 7.86 2.42	4.03
SSE	1 .44 .13	5 2.18 .67	6 3.93 1.21	3 1.31 .40	1 .44 .13	0 0.00 0.00	19 8.30 2.55	4.09
S	5 .87 .27	1 .44 .13	12 5.24 1.61	5 2.18 .67	3 1.31 .40	1 .44 .13	24 10.48 3.23	4.93
SSW	0 0.00 0.00	0 0.00 0.00	2 .87 .27	3 1.31 .40	2 .87 .27	1 .44 .13	8 3.49 1.08	7.21
SW	1 .44 .13	2 .87 .27	0 0.00 0.00	3 1.31 .40	1 .44 .13	1 .44 .13	8 3.49 1.08	5.87
WSW	1 .44 .13	0 0.00 0.00	2 .87 .27	1 .44 .13	0 0.00 0.00	0 0.00 0.00	4 1.75 .54	3.79
W	0 0.00 0.00	0 0.00 0.00	6 2.62 .81	2 .87 .27	1 .44 .13	0 0.00 0.00	9 3.93 1.21	4.63
WNW	0 0.00 0.00	1 .44 .13	3 1.31 .40	2 .87 .27	2 .87 .27	0 0.00 0.00	8 3.49 1.08	5.33
NW	0 0.00 0.00	2 .87 .27	4 1.75 .54	7 3.06 .94	11 4.80 1.48	2 .87 .27	26 11.35 3.49	7.02
NNW	1 .44 .13	3 1.31 .40	3 1.31 .40	15 6.55 2.02	9 3.93 1.21	12 5.24 1.61	43 18.78 5.78	8.39
N	0 0.00 0.00	6 2.62 .81	5 2.18 .67	2 .87 .27	7 3.06 .94	7 3.06 .94	27 11.79 3.63	7.27
CALM	12 5.24 1.61						12 5.24 1.61	CALM
TOTAL	55 10.42 3.36	32 13.97 4.30	55 24.02 7.39	51 22.27 6.85	42 18.34 5.65	24 10.48 3.23	229 100.00 30.78	5.69

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-53

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1	1	0	1	2	0	5	5.59
	.54	.54	0.00	.54	1.08	0.00	2.69	
	.13	.13	0.00	.13	.27	0.00	.67	
NE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ENE	0	1	0	0	0	0	1	2.37
	0.00	.54	0.00	0.00	0.00	0.00	.54	
	0.00	.13	0.00	0.00	0.00	0.00	.13	
E	0	2	0	0	0	0	2	2.61
	0.00	1.08	0.00	0.00	0.00	0.00	1.08	
	0.00	.27	0.00	0.00	0.00	0.00	.27	
ESE	0	0	0	1	0	0	1	6.64
	0.00	0.00	0.00	.54	0.00	0.00	.54	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
SE	1	1	3	0	0	0	5	3.51
	.54	.54	1.61	0.00	0.00	0.00	2.69	
	.13	.13	.40	0.00	0.00	0.00	.67	
SSE	1	5	3	0	1	0	10	3.32
	.54	2.69	1.61	0.00	.54	0.00	5.38	
	.13	.67	.40	0.00	.13	0.00	1.34	
S	1	3	3	7	18	4	36	7.31
	.54	1.61	1.61	3.76	9.68	2.15	19.35	
	.13	.40	.40	.94	2.42	.54	4.84	
SSW	0	0	3	4	12	3	22	8.07
	0.00	0.00	1.61	2.15	6.45	1.61	11.83	
	0.00	0.00	.40	.54	1.61	.40	2.95	
SW	1	0	1	8	8	1	19	7.11
	.54	0.00	.54	4.30	4.30	.54	10.22	
	.13	0.00	.13	1.08	1.08	.13	2.55	
WSW	0	2	7	1	0	0	10	3.84
	0.00	1.08	3.76	.54	0.00	0.00	5.38	
	0.00	.27	.94	.13	0.00	0.00	1.34	
W	0	2	2	2	0	0	6	3.95
	0.00	1.08	1.08	1.08	0.00	0.00	3.23	
	0.00	.27	.27	.27	0.00	0.00	.81	
WNW	0	0	2	2	5	3	12	8.25
	0.00	0.00	1.08	1.08	2.69	1.61	6.45	
	0.00	0.00	.27	.27	.67	.40	1.61	
NW	0	1	3	5	7	3	19	7.43
	0.00	.54	1.61	2.69	3.76	1.61	10.22	
	0.00	.13	.40	.67	.94	.40	2.55	
NNW	1	2	7	9	3	1	23	5.28
	.54	1.08	3.76	4.84	1.61	.54	12.37	
	.13	.27	.94	1.21	.40	.13	3.09	
N	3	0	1	3	2	0	9	4.69
	1.61	0.00	.54	1.61	1.08	0.00	4.84	
	.40	0.00	.13	.40	.27	0.00	1.21	
CALM	6						6	CALM
	3.23						3.23	
	.81						.81	
TOTAL	15	20	35	43	58	15	186	6.10
	8.06	10.75	18.82	23.12	31.18	8.06	100.00	
	2.02	2.69	4.70	5.78	7.80	2.02	25.00	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-54

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	1.90
NE	1 .91 .13	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	1.49
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	.95
SE	0 0.00 0.00	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	3.32
SSE	0 0.00 0.00	2 1.82 .27	2 1.82 .27	1 .91 .13	0 0.00 0.00	0 0.00 0.00	5 4.55 .67	4.27
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 5.45 .81	6 5.45 .81	1 .91 .13	13 11.82 1.75	7.40
SSW	0 0.00 0.00	1 .91 .13	1 .91 .13	3 2.73 .40	9 8.18 1.21	7 6.36 .94	21 19.09 2.82	8.24
SW	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	6 5.45 .81	4 3.64 .54	0 0.00 0.00	12 10.91 1.61	6.36
WSW	0 0.00 0.00	0 0.00 0.00	1 .91 .13	2 1.82 .27	1 .91 .13	0 0.00 0.00	4 3.64 .54	5.92
W	1 .91 .13	1 .91 .13	3 2.73 .40	4 3.64 .54	7 6.36 .94	2 1.82 .27	18 16.36 2.42	6.71
WNW	0 0.00 0.00	2 1.82 .27	2 1.82 .27	2 1.82 .27	2 1.82 .27	4 3.64 .54	12 10.91 1.61	7.51
NW	0 0.00 0.00	4 3.64 .54	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	5 4.55 .67	3.32
NNW	1 .91 .13	1 .91 .13	2 1.82 .27	1 .91 .13	0 0.00 0.00	0 0.00 0.00	5 4.55 .67	3.42
N	2 1.82 .27	1 .91 .13	0 0.00 0.00	1 .91 .13	1 .91 .13	0 0.00 0.00	5 4.55 .67	3.51
CALM	5 4.55 .67						5 4.55 .67	CALM
TOTAL	11 10.00 1.48	14 12.73 1.88	14 12.73 1.88	27 24.55 3.63	30 27.27 4.03	14 12.73 1.88	110 100.00 14.78	6.02

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-55

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	.47
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	4 10.00 .54	1 2.50 .13	0 0.00 0.00	6 15.00 .81	5.69
SW	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	5 12.50 .67	1 2.50 .13	0 0.00 0.00	7 17.50 .94	6.23
WSW	1 2.50 .13	1 2.50 .13	4 10.00 .54	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	7 17.50 .94	3.59
W	2 5.00 .27	1 2.50 .13	3 7.50 .40	1 2.50 .13	2 5.00 .27	0 0.00 0.00	9 22.50 1.21	4.16
WNW	0 0.00 0.00	1 2.50 .13	3 7.50 .40	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	5 12.50 .67	5.50
NW	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	2 5.00 .27	4.74
NNW	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	.45
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	2 5.00 .27						2 5.00 .27	CALM
TOTAL	8 20.00 1.08	3 7.50 .40	12 30.00 1.61	12 30.00 1.61	4 10.00 .54	1 2.50 .13	40 100.00 5.38	4.47

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-56

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 .27	4 .54	4 .54	1 .13	4 .54	2 .27	17 2.28	5.58
NE	2 .27	4 .54	2 .27	0 0.00	0 0.00	0 0.00	8 1.08	2.61
ENE	0 0.00	2 .27	0 0.00	0 0.00	0 0.00	0 0.00	2 .27	2.13
E	2 .27	2 .27	0 0.00	0 0.00	0 0.00	0 0.00	4 .54	1.77
ESE	3 .40	1 .13	0 0.00	6 .81	2 .27	0 0.00	12 1.61	4.90
SE	3 .40	6 .81	10 1.34	3 .40	2 .27	0 0.00	24 3.23	3.89
SSE	2 .27	12 1.61	14 1.88	4 .54	2 .27	0 0.00	34 4.57	3.89
S	3 .40	4 .54	16 2.15	22 2.96	30 4.03	7 .94	82 11.02	6.63
SSW	1 .13	1 .13	8 1.08	17 2.28	24 3.23	11 1.48	62 8.33	7.56
SW	2 .27	2 .27	5 .67	23 3.09	14 1.88	2 .27	48 6.45	6.52
WSW	2 .27	3 .40	14 1.88	5 .67	1 .13	0 0.00	25 3.36	4.10
W	4 .54	5 .67	18 2.42	11 1.48	10 1.34	2 .27	50 6.72	5.09
WNW	0 0.00	7 .94	12 1.61	9 1.21	10 1.34	8 1.08	46 6.18	6.53
NW	1 .13	9 1.21	12 1.61	19 2.55	28 3.76	14 1.88	83 11.16	7.26
NNW	4 .54	10 1.34	14 1.88	34 4.57	24 3.23	27 3.63	113 15.19	7.61
N	5 .67	9 1.21	13 1.75	13 1.75	40 5.38	29 3.90	109 14.65	7.82
CALM	25 3.36						25 3.36	CALM
TOTAL	61 8.20	81 10.89	142 19.09	167 22.45	191 25.67	102 13.71	744 100.00	6.33

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

TABLE 5-57

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	1	1	5	0	8	7.35
	0.00	.88	.88	.88	4.39	0.00	7.02	
	0.00	.13	.13	.13	.67	0.00	1.08	
NE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WSW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
W	0	0	1	0	0	0	1	4.27
	0.00	0.00	.88	0.00	0.00	0.00	.88	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
WNW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NW	0	0	4	7	5	0	16	6.34
	0.00	0.00	3.51	6.14	4.39	0.00	14.04	
	0.00	0.00	.54	.94	.67	0.00	2.15	
NNW	0	1	5	13	12	17	48	7.78
	0.00	.88	4.39	11.41	10.53	14.91	42.11	
	0.00	.13	.67	1.75	1.61	2.28	6.45	
N	0	2	3	9	11	16	41	8.39
	0.00	1.75	2.63	7.89	9.65	14.04	35.96	
	0.00	.27	.40	1.21	1.48	2.15	5.51	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	4	14	30	43	23	114	7.74
	0.00	3.51	12.28	26.32	37.72	20.18	100.00	
	0.00	.54	1.88	4.03	5.78	3.09	15.32	

KEY xxx NUMBER OF OCCURRENCES
xxx PERCENT OCCURRENCES THIS CLASS
xxx PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-58

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 10.26 .54	1 2.56 .13	5 12.82 .67	8.63
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	2 5.13 .27	0 0.00 0.00	0 0.00 0.00	3 7.69 .40	5.37
SSE	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	2 5.13 .27	0 0.00 0.00	0 0.00 0.00	3 7.69 .40	5.69
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	4.74
NW	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	1 2.56 .13	0 0.00 0.00	0 0.00 0.00	2 5.13 .27	5.21
NNW	0 0.00 0.00	2 5.13 .27	3 7.69 .40	0 0.00 0.00	2 5.13 .27	8 20.51 1.08	15 38.46 2.02	9.01
N	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	1 2.56 .13	3 7.69 .40	5 12.82 .67	10 25.64 1.34	11.38
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	6 0.00 0.00	3 7.69 .40	7 17.95 .94	6 15.38 .81	9 23.08 1.21	14 35.90 1.88	39 100.00 5.24	8.73

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-59

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7615-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	3.32
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	6.64
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	1.18
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	3 5.77 .40	0 0.00 0.00	0 0.00 0.00	4 7.69 .54	5.57
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	6.16
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	5.69
W	0 0.00 0.00	1 1.92 .13	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	3.79
WNW	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	4.26
NW	0 0.00 0.00	2 3.85 .27	1 1.92 .13	1 1.92 .13	2 3.85 .27	0 0.00 0.00	6 11.54 .81	5.37
NNW	0 0.00 0.00	1 1.92 .13	2 3.85 .27	1 1.92 .13	4 7.69 .54	10 19.23 1.34	18 34.62 2.42	9.22
N	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	4 7.69 .54	5 9.62 .67	11 21.15 1.48	9.95
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 3.85 .27	7 13.46 .94	7 13.46 .94	11 21.15 1.48	10 19.23 1.34	15 28.85 2.02	52 100.00 6.99	7.42

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-60

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 .33 .13	1 .33 .13	5 1.67 .67	1 .33 .13	0 0.00 0.00	8 2.67 1.08	5.75
NE	2 .67 .27	0 0.00 0.00	0 0.00 0.00	5 1.67 .67	3 1.00 .40	0 0.00 0.00	10 3.33 1.34	5.49
ENE	1 .33 .13	1 .33 .13	0 0.00 0.00	1 .33 .13	0 0.00 0.00	0 0.00 0.00	3 1.00 .40	2.85
E	1 .33 .13	0 0.00 0.00	0 0.00 0.00	9 3.00 1.21	1 .33 .13	0 0.00 0.00	11 3.67 1.48	6.21
ESE	1 .33 .13	4 1.33 .54	4 1.33 .54	2 .67 .27	0 0.00 0.00	0 0.00 0.00	11 3.67 1.48	3.62
SE	3 1.00 .40	1 .33 .13	3 1.00 .40	1 .33 .13	0 0.00 0.00	0 0.00 0.00	8 2.67 1.08	3.02
SSE	0 0.00 0.00	8 2.67 1.08	3 1.00 .40	2 .67 .27	5 1.67 .67	1 .33 .13	19 6.33 2.55	5.09
S	1 .33 .13	3 1.00 .40	16 5.33 2.15	14 4.67 1.88	8 2.67 1.08	1 .33 .13	43 14.33 5.78	5.53
SSW	0 0.00 0.00	0 0.00 0.00	9 3.00 1.21	3 1.00 .40	4 1.33 .54	1 .33 .13	17 5.67 2.28	5.99
SW	0 0.00 0.00	2 .67 .27	7 2.33 .94	4 1.33 .54	3 1.00 .40	1 .33 .13	17 5.67 2.28	5.63
WSW	0 0.00 0.00	6 2.00 .81	7 2.33 .94	3 1.00 .40	3 1.00 .40	0 0.00 0.00	19 6.33 2.55	4.61
W	4 1.33 .54	10 3.33 1.34	3 1.00 .40	1 .33 .13	1 .33 .13	0 0.00 0.00	19 6.33 2.55	2.57
WNW	1 .33 .13	1 .33 .13	4 1.33 .54	1 .33 .13	1 .33 .13	0 0.00 0.00	8 2.67 1.08	3.91
NW	2 .67 .27	7 2.33 .94	3 1.00 .40	5 1.67 .67	12 4.00 1.61	9 3.00 1.21	38 12.67 5.11	7.06
NNW	0 0.00 0.00	4 1.33 .54	2 .67 .27	7 2.33 .94	17 5.67 2.28	10 3.33 1.34	40 13.33 5.38	8.30
N	2 .67 .27	2 .67 .27	1 .33 .13	5 1.67 .67	16 5.33 2.15	3 1.00 .40	29 9.67 3.90	7.55
CALM	3 1.00 .40						3 1.00 .40	CALM
TOTAL	21 7.00 2.82	50 16.67 6.72	63 21.00 8.47	65 21.67 8.74	75 25.00 10.08	26 8.67 3.49	300 100.00 40.32	5.82

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-61

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	2 1.46 .27	2 1.46 .27	0 0.00 0.00	0 0.00 0.00	4 2.92 .54	5.09
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 .73 .13	0 0.00 0.00	2 1.46 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.19 .40	3.00
ESE	0 0.00 0.00	0 0.00 0.00	4 2.92 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.92 .54	4.03
SE	0 0.00 0.00	1 .73 .13	0 0.00 0.00	1 .73 .13	0 0.00 0.00	0 0.00 0.00	2 1.46 .27	4.26
SSE	0 0.00 0.00	0 0.00 0.00	1 .73 .13	1 .73 .13	0 0.00 0.00	0 0.00 0.00	2 1.46 .27	4.98
S	0 0.00 0.00	0 0.00 0.00	7 5.11 .94	6 4.38 .81	1 .73 .13	0 0.00 0.00	14 10.22 1.88	5.04
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.46 .27	0 0.00 0.00	0 0.00 0.00	2 1.46 .27	6.40
SW	1 .73 .13	1 .73 .13	6 4.38 .81	2 1.46 .27	0 0.00 0.00	0 0.00 0.00	10 7.30 1.34	4.27
WSW	0 0.00 0.00	1 .73 .13	4 2.92 .54	3 2.19 .40	1 .73 .13	0 0.00 0.00	9 6.57 1.21	4.79
W	1 .73 .13	8 5.84 1.08	6 4.38 .81	1 .73 .13	4 2.92 .54	2 1.46 .27	22 16.06 2.96	4.78
WNW	2 1.46 .27	0 0.00 0.00	4 2.92 .54	0 0.00 0.00	1 .73 .13	2 1.46 .27	9 6.57 1.21	5.69
NW	0 0.00 0.00	0 0.00 0.00	1 .73 .13	1 .73 .13	17 12.41 2.28	5 3.65 .67	24 17.52 3.23	9.07
NNW	3 2.19 .40	4 2.92 .54	4 2.92 .54	1 .73 .13	2 1.46 .27	3 2.19 .40	17 12.41 2.28	5.02
N	2 1.46 .27	3 2.19 .40	0 0.00 0.00	2 1.46 .27	1 .73 .13	3 2.19 .40	11 8.03 1.48	5.52
CALM	4 2.92 .54						4 2.92 .54	CALM
TOTAL	14 10.22 1.88	18 13.14 2.42	41 29.93 5.51	22 16.06 2.96	27 19.71 3.63	15 10.95 2.02	137 100.00 18.41	5.50

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-62

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 2.70 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.70 .27	2.13
NE	0 0.00 0.00	0 0.00 0.00	2 2.70 .27	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	3 4.05 .40	4.27
ENE	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	3.79
E	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	3.79
ESE	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	3.79
SE	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	2 2.70 .27	0 0.00 0.00	0 0.00 0.00	3 4.05 .40	5.06
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	1 1.35 .13	0 0.00 0.00	3 4.05 .40	0 0.00 0.00	0 0.00 0.00	4 5.41 .54	5.21
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.70 .27	0 0.00 0.00	0 0.00 0.00	2 2.70 .27	5.45
SW	0 0.00 0.00	0 0.00 0.00	2 2.70 .27	7 9.46 .94	0 0.00 0.00	0 0.00 0.00	9 12.16 1.21	5.21
WSW	0 0.00 0.00	1 1.35 .13	2 2.70 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.05 .40	3.95
W	0 0.00 0.00	2 2.70 .27	4 5.41 .54	7 9.46 .94	1 1.35 .13	0 0.00 0.00	14 18.92 1.88	5.01
WNW	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	4 5.41 .54	1 1.35 .13	0 0.00 0.00	6 8.11 .81	6.26
NW	0 0.00 0.00	3 4.05 .40	2 2.70 .27	2 2.70 .27	4 5.41 .54	0 0.00 0.00	11 14.86 1.48	6.03
NNW	0 0.00 0.00	1 1.35 .13	3 4.05 .40	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	5 6.76 .67	4.36
N	0 0.00 0.00	3 4.05 .40	4 5.41 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 9.46 .94	3.25
CALM	2 2.70 .27						2 2.70 .27	CALM
TOTAL	2 2.70 .27	13 17.57 1.75	24 32.43 3.23	29 39.19 3.90	6 8.11 .81	0 0.00 0.00	74 100.00 9.95	4.77

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-63

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	.95
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	4.74
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	1 3.57 .13	2 7.14 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 10.71 .40	1.90
W	0 0.00 0.00	1 3.57 .13	4 14.29 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 17.86 .67	3.60
WNW	1 3.57 .13	1 3.57 .13	1 3.57 .13	1 3.57 .13	1 3.57 .13	0 0.00 0.00	5 17.86 .67	4.74
NW	1 3.57 .13	0 0.00 0.00	1 3.57 .13	2 7.14 .27	2 7.14 .27	1 3.57 .13	7 25.00 .94	6.70
NNW	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	4.74
N	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	3 10.71 .40	0 0.00 0.00	0 0.00 0.00	4 14.29 .54	4.26
CALM	1 3.57 .13						1 3.57 .13	CALM
TOTAL	6 21.43 .81	4 14.29 .54	8 28.57 1.08	6 21.43 .81	3 10.71 .40	1 3.57 .13	28 100.00 3.76	4.35

KEY xxx NUMBER OF OCCURRENCES
xxx PERCENT OCCURRENCES THIS CLASS
xxx PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-64

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND): 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .13	4 .54	5 .67	8 1.08	10 1.34	1 .13	29 3.90	6.10
NE	2 .27	0 0.00	2 .27	4 .54	3 .40	0 0.00	11 1.48	5.26
ENE	1 .13	1 .13	1 .13	1 .13	0 0.00	0 0.00	4 .54	3.08
E	4 .54	0 0.00	3 .40	9 1.21	1 .13	0 0.00	17 2.28	4.91
ESE	1 .13	4 .54	9 1.21	2 .27	0 0.00	0 0.00	16 2.15	3.73
SE	3 .40	2 .27	5 .67	6 .81	0 0.00	0 0.00	16 2.15	4.00
SSE	0 0.00	8 1.08	6 .81	8 1.08	5 .67	1 .13	28 3.76	5.21
S	1 .13	4 .54	23 3.09	25 3.36	9 1.21	1 .13	63 8.47	5.42
SSW	0 0.00	0 0.00	10 1.34	7 .94	4 .54	1 .13	22 2.96	5.92
SW	1 .13	3 .40	15 2.02	13 1.75	3 .40	1 .13	36 4.84	5.15
WSW	1 .13	10 1.34	13 1.75	8 1.08	4 .54	0 0.00	35 4.70	4.44
W	5 .67	22 2.96	20 2.69	9 1.21	6 .81	2 .27	64 8.60	4.03
WNW	4 .54	3 .40	11 1.48	7 .94	4 .54	2 .27	31 4.17	5.07
NW	3 .40	12 1.61	13 1.75	19 2.55	42 5.65	15 2.02	104 13.98	7.15
NNW	3 .40	13 1.75	20 2.69	27 3.63	38 5.11	43 5.78	144 19.35	7.77
N	5 .67	13 1.75	8 1.08	16 2.15	44 5.91	27 3.63	113 15.19	7.85
CALM	10 1.34						10 1.34	CALM
TOTAL	45 6.05	99 13.31	164 22.04	169 22.72	173 23.25	94 12.63	744 100.00	6.16

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

TABLE 5-65

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	3 4.23 .45	3 4.23 .45	4 5.63 .60	0 0.00 0.00	10 14.08 1.49	6.45
NE	0 0.00 0.00	0 0.00 0.00	3 4.23 .45	1 1.41 .15	0 0.00 0.00	0 0.00 0.00	4 5.63 .60	4.26
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	1 1.41 .15	4 5.63 .60	1 1.41 .15	1 1.41 .15	7 9.86 1.04	7.11
NNW	0 0.00 0.00	1 1.41 .15	0 0.00 0.00	9 12.68 1.34	7 9.86 1.04	9 12.68 1.34	26 36.62 3.87	8.97
N	0 0.00 0.00	4 5.63 .60	2 2.82 .30	5 7.04 .74	7 9.86 1.04	6 8.45 .89	24 33.80 3.57	7.62
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	5 7.04 .74	9 12.68 1.34	22 30.99 3.27	19 26.76 2.83	16 22.54 2.38	71 100.00 10.57	7.71

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-66

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 95.92 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 9.30 .60	1 2.33 .15	0 0.00 0.00	5 11.63 .74	6.73
NE	0 0.00 0.00	1 2.33 .15	2 4.65 .30	1 2.33 .15	0 0.00 0.00	0 0.00 0.00	4 9.30 .60	4.15
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.65 .30	0 0.00 0.00	2 4.65 .30	9.30
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	0 0.00 0.00	1 2.33 .15	8.06
NW	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	1 2.33 .15	0 0.00 0.00	3 6.98 .45	5 11.63 .74	11.38
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	2 4.65 .30	3 6.98 .45	10.75
N	0 0.00 0.00	2 4.65 .30	1 2.33 .15	8 18.60 1.19	6 13.95 .89	6 13.95 .89	23 53.49 3.42	8.08
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	3 6.98 .45	4 9.30 .60	14 32.56 2.08	11 25.58 1.64	11 25.58 1.64	43 100.00 6.40	8.17

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-67

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.9 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 0.00 0.00	0 0.00 0.00	1 1.89 .15	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	6.16
NE	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	2 3.77 .30	0 0.00 0.00	0 0.00 0.00	3 5.66 .45	6.01
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.66 .45	0 0.00 0.00	0 0.00 0.00	3 5.66 .45	5.69
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	5.45
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	5.92
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	1 1.89 .15	0 0.00 0.00	2 3.77 .30	7.11
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 7.55 .60	4 7.55 .60	13.75
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	2 3.77 .30	3 5.66 .45	7 13.21 1.04	10.84
N	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	7 13.21 1.04	11 20.75 1.64	10 18.87 1.49	29 54.72 4.32	9.41
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	20 37.74 2.98	14 26.42 2.08	17 32.08 2.53	53 100.00 7.89	9.10

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-68

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 99.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .45 .15	3 1.36 .45	1 .45 .15	0 0.00 0.00	5 2.26 .74	5.59
NE	0 0.00 0.00	3 1.36 .45	4 1.81 .60	2 .90 .30	0 0.00 0.00	0 0.00 0.00	9 4.07 1.34	4.05
ENE	0 0.00 0.00	0 0.00 0.00	3 1.36 .45	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.36 .45	3.64
E	0 0.00 0.00	0 0.00 0.00	2 .90 .30	1 .45 .15	0 0.00 0.00	0 0.00 0.00	3 1.36 .45	4.74
ESE	0 0.00 0.00	1 .45 .15	4 1.81 .60	4 1.81 .60	0 0.00 0.00	0 0.00 0.00	9 4.07 1.34	4.42
SE	0 0.00 0.00	0 0.00 0.00	1 .45 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .45 .15	4.27
SSE	1 .45 .15	1 .45 .15	1 .45 .15	0 0.00 0.00	0 0.00 0.00	1 .45 .15	4 1.81 .60	4.86
S	1 .45 .15	6 2.71 .89	2 .90 .30	0 0.00 0.00	2 .90 .30	12 5.43 1.79	23 10.41 3.42	8.39
SSW	1 .45 .15	3 1.36 .45	6 2.71 .89	11 4.98 1.64	3 1.36 .45	3 1.36 .45	27 12.22 4.02	5.85
SW	0 0.00 0.00	0 0.00 0.00	6 2.71 .89	4 1.81 .60	0 0.00 0.00	2 .90 .30	12 5.43 1.79	6.08
WSW	3 1.36 .45	1 .45 .15	12 5.43 1.79	3 1.36 .45	1 .45 .15	2 .90 .30	22 9.95 3.27	4.85
W	0 0.00 0.00	7 3.17 1.04	3 1.36 .45	4 1.81 .60	1 .45 .15	2 .90 .30	17 7.69 2.53	5.05
WNW	0 0.00 0.00	1 .45 .15	1 .45 .15	0 0.00 0.00	0 0.00 0.00	13 5.88 1.93	15 6.79 2.23	11.22
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .45 .15	6 2.71 .89	10 4.52 1.49	17 7.69 2.53	10.87
NNW	0 0.00 0.00	1 .45 .15	1 .45 .15	2 .90 .30	3 1.36 .45	7 3.17 1.04	14 6.33 2.08	9.75
N	3 1.36 .45	0 0.00 0.00	6 2.71 .89	9 4.07 1.34	6 2.71 .89	8 3.62 1.19	32 14.48 4.76	7.29
CALM	8 3.62 1.19						8 3.62 1.19	CALM
TOTAL	17 7.69 2.53	24 10.86 3.57	53 23.98 7.89	44 19.91 6.55	23 10.41 3.42	60 27.15 8.93	221 100.00 32.89	6.75

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-69

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STACILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 98.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND): 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .65 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .65 .15	.95
NE	2 1.31 .30	1 .65 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.96 .45	1.26
ENE	0 0.00 0.00	1 .65 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .65 .15	1.90
E	0 0.00 0.00	0 0.00 0.00	2 1.31 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.31 .30	4.50
ESE	0 0.00 0.00	0 0.00 0.00	1 .65 .15	1 .65 .15	0 0.00 0.00	0 0.00 0.00	2 1.31 .30	4.74
SE	0 0.00 0.00	0 0.00 0.00	1 .65 .15	3 1.31 .30	2 1.31 .30	1 .65 .15	7 4.58 1.04	8.80
SSE	0 0.00 0.00	0 0.00 0.00	2 1.31 .30	1 .65 .15	1 .65 .15	4 2.61 .60	8 5.23 1.19	9.42
S	0 0.00 0.00	2 1.31 .30	4 2.61 .60	1 .65 .15	0 0.00 0.00	2 1.31 .30	9 5.88 1.34	6.69
SSW	1 .65 .15	1 .65 .15	6 3.92 .89	13 8.50 1.93	1 .65 .15	0 0.00 0.00	22 14.38 3.27	5.54
SW	0 0.00 0.00	4 2.61 .60	3 1.96 .45	6 3.92 .89	1 .65 .15	1 .65 .15	15 9.80 2.23	4.96
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.96 .45	0 0.00 0.00	0 0.00 0.00	3 1.96 .45	6.01
W	0 0.00 0.00	0 0.00 0.00	4 2.61 .60	2 1.31 .30	2 1.31 .30	1 .65 .15	12 7.84 1.79	7.03
WNW	0 0.00 0.00	1 .65 .15	4 2.61 .60	2 1.31 .30	4 2.61 .60	1 .65 .15	12 7.84 1.79	6.40
NW	0 0.00 0.00	1 .65 .15	5 3.27 .74	5 3.27 .74	13 8.50 1.93	3 1.96 .45	27 17.65 4.02	7.65
NNW	0 0.00 0.00	0 0.00 0.00	1 .65 .15	3 1.96 .45	6 3.92 .89	4 2.61 .60	14 9.15 2.08	8.57
N	1 .65 .15	1 .65 .15	2 1.31 .30	3 1.96 .45	2 1.31 .30	0 0.00 0.00	9 5.88 1.34	5.37
CALM	4 2.61 .60						4 2.61 .60	CALM
TOTAL	9 5.88 1.34	12 7.84 1.79	35 22.88 5.21	42 27.45 6.25	34 22.22 5.06	21 13.73 3.12	153 100.00 22.77	6.47

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-70

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	4.74
NE	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	4.27
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	1 1.37 .15	9 12.33 1.34	4 5.48 .60	1 1.37 .15	0 0.00 0.00	15 [illegible]	4.69
SW	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	3 4.11 .45	5.53
WSW	0 0.00 0.00	3 4.11 .45	2 2.74 .30	2 2.74 .30	1 1.37 .15	0 0.00 0.00	8 10.96 1.19	4.74
W	0 0.00 0.00	2 2.74 .30	3 4.11 .45	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	7 9.59 1.04	4.67
WNW	0 0.00 0.00	1 1.37 .15	3 4.11 .45	2 2.74 .30	2 2.74 .30	0 0.00 0.00	8 10.96 1.19	5.63
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	2 2.74 .30	2 2.74 .30	5 6.85 .74	9.29
NNW	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	1 1.37 .15	7 9.59 1.04	2 2.74 .30	12 16.44 1.79	8.37
N	0 0.00 0.00	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	0 0.00 0.00	3 4.11 .45	7.42
CALM	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	0 0.00 0.00	1 1.37 .15	8.06
	9 12.33 1.34						9 12.33 1.34	CALM
TOTAL	9 12.33 1.34	8 10.96 1.19	22 30.14 3.27	14 19.18 2.08	16 21.92 2.38	4 5.48 .60	73 100.00 10.86	5.27

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-71

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	1	0	0	0	0	1	2.37
	0.00	1.72	0.00	0.00	0.00	0.00	1.72	
	0.00	.15	0.00	0.00	0.00	0.00	.15	
SSE	0	0	1	1	0	0	2	5.45
	0.00	0.00	1.72	1.72	0.00	0.00	3.45	
	0.00	0.00	.15	.15	0.00	0.00	.30	
S	1	0	1	0	0	0	2	2.37
	1.72	0.00	1.72	0.00	0.00	0.00	3.45	
	.15	0.00	.15	0.00	0.00	0.00	.30	
SSW	0	0	2	2	0	0	4	5.33
	0.00	0.00	3.45	3.45	0.00	0.00	6.90	
	0.00	0.00	.30	.30	0.00	0.00	.60	
SW	0	0	0	9	0	0	9	6.00
	0.00	0.00	0.00	15.52	0.00	0.00	15.52	
	0.00	0.00	0.00	1.34	0.00	0.00	1.34	
WSW	0	5	4	5	0	0	14	4.30
	0.00	8.62	6.90	8.62	0.00	0.00	24.14	
	0.00	.74	.60	.74	0.00	0.00	2.08	
W	0	2	3	3	2	0	10	5.02
	0.00	3.45	5.17	5.17	3.45	0.00	17.24	
	0.00	.30	.45	.45	.30	0.00	1.49	
WNW	0	1	0	1	0	0	2	4.03
	0.00	1.72	0.00	1.72	0.00	0.00	3.45	
	0.00	.15	0.00	.15	0.00	0.00	.30	
NW	0	1	1	0	0	0	2	3.32
	0.00	1.72	1.72	0.00	0.00	0.00	3.45	
	0.00	.15	.15	0.00	0.00	0.00	.30	
NNW	0	0	3	3	0	0	6	4.58
	0.00	0.00	5.17	5.17	0.00	0.00	10.34	
	0.00	0.00	.45	.45	0.00	0.00	.89	
N	0	0	1	4	0	1	6	6.32
	0.00	0.00	1.72	6.90	0.00	1.72	10.34	
	0.00	0.00	.15	.60	0.00	.15	.89	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	10	16	28	2	1	58	4.90
	1.72	17.24	27.59	48.28	3.45	1.72	100.00	
	.15	1.49	2.38	4.17	.30	.15	8.63	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-72

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC P WER DISTRICT
DAMES AND MOORE JOB NO: 7535-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .15	0 0.00	5 .74	11 1.64	6 .89	0 0.00	23 3.42	6.00
NE	2 .30	5 .74	11 1.64	6 .89	0 0.00	0 0.00	24 3.57	4.01
ENE	0 0.00	1 .15	3 .45	0 0.00	0 0.00	0 0.00	4 .60	3.20
E	0 0.00	0 0.00	4 .60	1 .15	0 0.00	0 0.00	5 .74	4.65
ESE	0 0.00	1 .15	5 .74	5 .74	0 0.00	0 0.00	11 1.64	4.48
SE	0 0.00	1 .15	2 .30	2 .30	2 .30	4 .60	11 1.64	7.80
SSE	1 .15	1 .15	4 .60	2 .30	1 .15	5 .74	14 2.08	7.55
S	2 .30	9 1.34	16 2.38	5 .74	3 .45	14 2.08	49 7.29	6.64
SSW	2 .30	4 .60	15 2.23	31 4.61	4 .60	3 .45	59 8.78	5.67
SW	0 0.00	7 1.04	11 1.64	23 3.42	2 .30	3 .45	46 6.85	5.44
WSW	3 .45	8 1.19	19 2.83	15 2.23	1 .15	2 .30	48 7.14	4.75
W	0 0.00	10 1.49	13 1.93	12 1.79	12 1.79	4 .60	51 7.59	5.84
WNW	6 0.00	3 .45	5 .74	4 .60	7 1.04	10 2.38	35 5.21	8.79
NW	0 0.00	2 .30	10 1.49	12 1.79	27 4.02	23 3.42	74 11.01	8.92
NNW	0 0.00	3 .45	5 .74	19 2.83	21 3.12	25 3.72	73 10.86	8.87
N	4 .60	7 1.04	13 1.93	36 5.36	33 4.91	31 4.61	124 18.45	7.82
CALM	21 3.12						21 3.12	CALM
TOTAL	36 5.36	62 9.23	141 20.98	184 27.38	119 17.71	130 19.35	672 100.00	6.74

NUMBER OF VALID OBSERVATIONS 672 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 672 100.00 PCT.

KEY xxx NUMBER OF OCCURRENCES
xxx PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-73

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	1	2	0	0	3	5.21
	0.00	0.00	2.08	4.17	0.00	0.00	6.25	
	0.00	0.00	.13	.27	0.00	0.00	.40	
NE	0	0	0	1	0	0	1	5.69
	0.00	0.00	0.00	2.08	0.00	0.00	2.08	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	0	0	1	0	0	1	6.16
	0.00	0.00	0.00	2.08	0.00	0.00	2.08	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
SSE	0	1	1	1	1	0	4	5.33
	0.00	2.08	2.08	2.08	2.08	0.00	8.33	
	0.00	.13	.13	.13	.13	0.00	.54	
S	0	0	1	0	0	1	2	9.00
	0.00	0.00	2.08	0.00	0.00	2.08	4.17	
	0.00	0.00	.13	0.00	0.00	.13	.27	
SSW	0	0	0	0	0	5	5	14.03
	0.00	0.00	0.00	0.00	0.00	10.42	10.42	
	0.00	0.00	0.00	0.00	0.00	.67	.67	
SW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WSW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
W	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WNW	0	0	0	1	0	0	1	6.64
	0.00	0.00	0.00	2.08	0.00	0.00	2.08	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
NW	0	0	0	6	0	1	7	6.91
	0.00	0.00	0.00	12.50	0.00	2.08	14.58	
	0.00	0.00	0.00	.81	0.00	.13	.94	
NNW	0	0	0	0	1	0	1	9.48
	0.00	0.00	0.00	0.00	2.08	0.00	2.08	
	0.00	0.00	0.00	0.00	.13	0.00	.13	
N	0	1	3	0	13	6	23	8.68
	0.00	2.08	6.25	0.00	27.08	12.50	47.92	
	0.00	.13	.40	0.00	1.75	.81	3.09	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	2	6	12	15	13	48	8.35
	0.00	4.17	12.50	25.00	31.25	27.08	100.00	
	0.00	.27	.81	1.61	2.02	1.75	6.45	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-74

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 2.17 .13	1 2.17 .13	2 4.35 .27	1 2.17 .13	1 2.17 .13	6 13.04 .81	6.40
NE	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	3.32
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	2.37
ESE	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	0 0.00 0.00	3 6.52 .40	6.32
SE	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	3.55
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	1 2.17 .13	4 8.70 .54	7 15.22 .94	10.43
SSW	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	5.21
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	1 2.17 .13	3 6.52 .40	10.27
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	3 6.52 .40	4 8.70 .54	12.56
W	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	4.74
WNW	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	2 4.35 .27	6.16
NW	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	4 8.70 .54	1 2.17 .13	3 6.52 .40	9 19.57 1.21	8.06
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.52 .40	1 2.17 .13	4 8.70 .54	8.53
CALM	1 2.17 .13						1 2.17 .13	CALM
TOTAL	1 2.17 .13	4 8.70 .54	7 15.22 .94	9 19.57 1.21	12 26.09 1.61	13 28.26 1.75	46 100.00 6.18	7.79

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-75

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .96 .13	1 .96 .13	2 1.92 .27	0 0.00 0.00	4 3.85 .54	6.28
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.88 .40	2 1.92 .27	0 0.00 0.00	5 4.81 .67	6.82
ENE	0 0.00 0.00	1 .96 .13	1 .96 .13	1 .96 .13	0 0.00 0.00	0 0.00 0.00	3 2.88 .40	3.79
E	0 0.00 0.00	0 0.00 0.00	4 3.85 .54	1 .96 .13	0 0.00 0.00	0 0.00 0.00	5 4.81 .67	4.55
ESE	0 0.00 0.00	0 0.00 0.00	1 .96 .13	0 0.00 0.00	1 .96 .13	1 .96 .13	3 2.88 .40	7.90
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.92 .27	0 0.00 0.00	0 0.00 0.00	2 1.92 .27	6.40
SSE	0 0.00 0.00	0 0.00 0.00	1 .96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .96 .13	4.74
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.92 .27	1 .96 .13	6 5.77 .81	9 8.65 1.21	10.06
SSW	0 0.00 0.00	0 0.00 0.00	5 4.81 .67	2 1.92 .27	1 .96 .13	1 .96 .13	9 8.65 1.21	6.11
SW	0 0.00 0.00	1 .96 .13	1 .96 .13	2 1.92 .27	4 3.85 .54	1 .96 .13	9 8.65 1.21	7.06
WSW	0 0.00 0.00	0 0.00 0.00	4 3.85 .54	1 .96 .13	2 1.92 .27	3 2.88 .40	10 9.62 1.34	7.63
W	0 0.00 0.00	1 .96 .13	1 .96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.92 .27	3.31
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .96 .13	0 0.00 0.00	2 1.92 .27	3 2.88 .40	12.96
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 4.81 .67	5 5.77 .81	5 5.77 .81	17 16.35 2.28	9.62
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .96 .13	3 2.88 .40	3 2.88 .40	7 6.73 .94	9.21
N	0 0.00 0.00	1 .96 .13	0 0.00 0.00	1 .96 .13	4 3.85 .54	7 6.73 .94	13 12.50 1.75	9.77
CALM	2 1.92 .27						2 1.92 .27	CALM
TOTAL	2 1.92 .27	4 3.85 .54	19 18.27 2.55	23 22.12 3.09	26 25.00 3.49	30 28.85 4.03	104 100.00 13.98	7.89

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-76

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	1	1	2	0	4	6.99
	0.00	0.00	.29	.29	.58	0.00	1.16	
	0.00	0.00	.13	.13	.27	0.00	.54	
NE	0	0	0	0	3	0	3	8.06
	0.00	0.00	0.00	0.00	.87	0.00	.87	
	0.00	0.00	0.00	0.00	.40	0.00	.40	
ENE	0	0	0	1	3	2	6	9.71
	0.00	0.00	0.00	.29	.87	.58	1.73	
	0.00	0.00	0.00	.13	.40	.27	.81	
E	0	0	5	3	1	0	9	5.11
	0.00	0.00	1.45	.87	.29	0.00	2.60	
	0.00	0.00	.67	.40	.13	0.00	1.21	
ESE	0	0	0	1	3	2	6	8.22
	0.00	0.00	0.00	.87	.29	.58	1.73	
	0.00	0.00	0.00	.40	.13	.27	.81	
SE	1	1	5	21	15	8	51	7.50
	.29	.29	1.45	6.07	4.34	2.31	14.74	
	.13	.13	.67	2.82	2.02	1.08	6.85	
SSE	0	0	1	9	11	17	38	9.26
	0.00	0.00	.29	2.60	3.18	4.91	10.98	
	0.00	0.00	.13	1.21	1.48	2.25	5.11	
S	1	1	7	9	19	20	56	8.74
	.29	.29	2.02	2.31	5.49	5.78	16.18	
	.13	.13	.94	1.08	2.55	2.69	7.53	
SSW	0	2	3	5	6	2	18	7.51
	0.00	.58	.87	1.45	.58	1.73	5.20	
	0.00	.27	.40	.67	.27	.81	2.42	
SW	0	0	4	5	6	4	19	8.08
	0.00	0.00	1.16	1.45	1.73	1.16	5.49	
	0.00	0.00	.54	.67	.81	.54	2.55	
WSW	0	2	2	4	3	11	22	8.55
	0.00	.58	.58	1.16	.87	3.18	6.36	
	0.00	.27	.27	.54	.40	1.48	2.96	
W	0	1	1	0	2	13	17	10.68
	0.00	.29	.29	0.00	.58	3.76	4.91	
	0.00	.13	.13	0.00	.27	1.75	2.28	
WNW	1	1	0	8	9	6	25	8.66
	.29	.29	0.00	2.31	2.60	1.73	7.23	
	.13	.13	0.00	1.08	1.21	.81	3.36	
NW	0	0	2	5	21	10	38	8.99
	0.00	0.00	.58	1.45	6.07	2.89	10.98	
	0.00	0.00	.27	.67	2.82	1.34	5.11	
NNW	1	0	1	1	3	8	14	9.79
	.29	0.00	.29	.29	.87	2.31	4.05	
	.13	0.00	.13	.13	.40	1.08	1.88	
N	0	0	1	8	4	3	16	7.85
	0.00	0.00	.29	2.31	1.16	.87	4.62	
	0.00	0.00	.13	1.08	.54	.40	2.15	
CALM	4						4	CALM
	1.16						1.16	
	.54						.54	
TOTAL	8	8	33	82	105	110	346	8.41
	2.31	2.31	9.54	23.70	30.35	31.79	100.00	
	1.08	1.08	4.44	11.02	14.11	14.78	46.51	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-77

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .76 .13	2 1.53 .27	0 0.00 0.00	0 0.00 0.00	3 2.29 .40	5.53
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	1 .76 .13	7.11
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	1 .76 .13	4 3.05 .54	7 5.34 .94	2 1.53 .27	14 10.69 1.88	8.23
SSE	0 0.00 0.00	2 1.53 .27	0 0.00 0.00	7 5.34 .94	11 8.40 1.48	10 7.63 1.34	30 22.90 4.03	8.74
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 3.82 .67	10 7.63 1.34	4 3.05 .54	19 14.50 2.55	8.76
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .76 .13	4 3.05 .54	10 7.63 1.34	15 11.45 2.02	10.52
SW	0 0.00 0.00	1 .76 .13	1 .76 .13	1 .76 .13	4 3.05 .54	6 4.58 .81	13 9.92 1.75	8.75
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .76 .13	0 0.00 0.00	2 1.53 .27	3 2.29 .40	9.64
W	0 0.00 0.00	2 1.53 .27	3 2.29 .40	0 0.00 0.00	0 0.00 0.00	1 .76 .13	6 4.58 .81	4.27
WNW	1 .76 .13	2 1.53 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.29 .40	1.90
NW	1 .76 .13	1 .76 .13	0 0.00 0.00	2 1.53 .27	0 0.00 0.00	1 .76 .13	5 3.82 .67	5.03
NNW	2 1.53 .27	1 .76 .13	1 .76 .13	2 1.53 .27	2 1.53 .27	1 .76 .13	9 6.87 1.21	5.48
N	0 0.00 0.00	0 0.00 0.00	4 3.05 .54	0 0.00 0.00	2 1.53 .27	0 0.00 0.00	6 4.58 .81	5.37
CALM	4 3.05 .54						4 3.05 .54	CALM
TOTAL	8 6.11 1.08	9 6.87 1.21	11 8.40 1.48	26 19.85 3.49	40 30.53 5.38	37 28.24 4.97	131 100.00 17.61	7.68

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-78

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	.95
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	1 0.96 0.06	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 0.96 0.06	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	1 1.92 .13	4 7.69 .54	9.24
SSE	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	1 1.92 .13	2 3.85 .27	1 1.92 .13	6 11.54 .81	7.35
S	2 3.85 .27	1 1.92 .13	1 1.92 .13	5 9.62 .67	1 1.92 .13	0 0.00 0.00	10 19.23 1.34	5.31
SSW	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	4 7.69 .54	6.87
SW	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	5 9.62 .67	3 5.77 .40	3 5.77 .40	12 23.08 1.61	7.86
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	3 5.77 .40	0 0.00 0.00	4 7.69 .54	7.94
W	0 0.00 0.00	1 1.92 .13	1 1.92 .13	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	3.63
WNW	0 0.00 0.00	1 1.92 .13	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	3.08
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	1 1.92 .13	0 0.00 0.00	4 7.69 .54	7.35
NNW	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	3.79
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	1 1.92 .13						1 1.92 .13	CALM
TOTAL	4 7.69 .54	3 5.77 .40	9 17.31 1.21	16 30.77 2.15	15 28.85 2.02	5 9.62 .67	52 100.00 6.99	6.52

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-79

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 95.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	4.27
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	3.79
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	3.79
S	0 0.00 0.00	2 11.76 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 11.76 .27	2.37
SSW	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	3.32
SW	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	0 0.00 0.00	3 17.65 .40	1 5.88 .13	5 29.41 .67	8.34
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	1 5.88 .13	2 11.76 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 17.65 .40	3.63
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	5.69
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	2 11.76 .27						2 11.76 .27	CALM
TOTAL	2 11.76 .27	3 17.65 .40	7 41.18 .94	1 5.88 .13	3 17.65 .40	1 5.88 .13	17 100.00 2.28	4.60

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-80

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .13	1 .13	5 .67	8 1.08	5 .67	1 .13	21 2.82	5.94
NE	0 0.00	0 0.00	2 .27	5 .67	5 .67	0 0.00	12 1.61	6.56
ENE	0 0.00	1 .13	1 .13	2 .27	3 .40	2 .27	9 1.21	7.74
E	0 0.00	1 .13	9 1.21	4 .54	1 .13	0 0.00	15 2.02	4.74
ESE	0 0.00	1 .13	2 .27	3 .40	4 .54	3 .40	13 1.75	7.37
SE	1 .13	1 .13	8 1.08	28 3.76	25 3.36	11 1.48	74 9.95	7.58
SSE	0 0.00	3 .40	6 .81	18 2.42	25 3.36	28 3.76	80 10.75	8.60
S	3 .40	4 .54	9 1.21	22 2.96	32 4.30	35 4.70	105 14.11	8.53
SSW	0 0.00	2 .27	12 1.61	9 1.21	9 1.21	22 2.96	54 7.26	8.51
SW	0 0.00	2 .27	8 1.08	13 1.75	22 2.96	16 2.15	61 8.20	8.16
WSW	0 0.00	2 .27	6 .81	7 .94	9 1.21	19 2.55	43 5.78	8.73
W	0 0.00	6 .81	9 1.21	1 .13	2 .27	14 1.88	32 4.30	7.51
WNW	2 .27	4 .54	2 .27	10 1.34	10 1.34	8 1.08	36 4.84	7.95
NW	1 .13	2 .27	2 .27	26 3.49	29 3.90	21 2.82	81 10.89	8.47
NNW	3 .40	1 .13	3 .40	4 .54	9 1.21	12 1.61	32 4.30	8.25
N	0 0.00	2 .27	8 1.08	9 1.21	26 3.49	17 2.28	62 8.33	8.36
CALM	14 1.88						14 1.88	CALM
TOTAL	25 3.36	33 4.44	92 12.37	169 22.72	216 29.03	209 28.09	744 100.00	7.95

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-81

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	2	0	5	0	8	6.52
	0.00	1.25	2.50	0.00	6.25	0.00	10.00	
	0.00	.14	.28	0.00	.69	0.00	1.11	
NE	0	1	0	3	1	0	5	5.78
	0.00	1.25	0.00	3.75	1.25	0.00	6.25	
	0.00	.14	0.00	.42	.14	0.00	.69	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S	0	0	0	0	1	0	1	7.58
	0.00	0.00	0.00	0.00	1.25	0.00	1.25	
	0.00	0.00	0.00	0.00	.14	0.00	.14	
SSW	0	0	0	0	0	3	3	10.43
	0.00	0.00	0.00	0.00	0.00	3.75	3.75	
	0.00	0.00	0.00	0.00	0.00	.42	.42	
SW	0	0	0	1	8	0	9	16.22
	0.00	0.00	0.00	0.00	1.25	10.00	11.25	
	0.00	0.00	0.00	0.00	.14	1.11	1.25	
WSW	0	0	0	0	1	1	1	17.07
	0.00	0.00	0.00	0.00	0.00	1.25	1.25	
	0.00	0.00	0.00	0.00	0.00	.14	.14	
W	0	0	1	0	0	0	1	4.74
	0.00	0.00	1.25	0.00	0.00	0.00	1.25	
	0.00	0.00	.14	0.00	0.00	0.00	.14	
WNW	0	0	0	1	0	0	1	5.69
	0.00	0.00	0.00	1.25	0.00	0.00	1.25	
	0.00	0.00	0.00	.14	0.00	0.00	.14	
NW	0	0	2	0	0	1	3	6.95
	0.00	0.00	2.50	0.00	0.00	1.25	3.75	
	0.00	0.00	.28	0.00	0.00	.14	.42	
NNW	0	2	1	3	0	10	16	9.48
	0.00	2.50	1.25	3.75	0.00	12.50	20.00	
	0.00	.28	.14	.42	0.00	1.39	2.22	
N	0	0	7	7	9	9	32	7.93
	0.00	0.00	8.75	8.75	11.25	11.25	40.00	
	0.00	0.00	.97	.97	1.25	1.25	4.44	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	4	13	14	17	32	80	8.99
	0.00	5.00	16.25	17.50	21.25	40.00	100.00	
	0.00	.56	1.81	1.94	2.36	4.44	11.11	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-82

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	1 2.00 .14	0 0.00 0.00	2 4.00 .28	7.34
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.00 .28	0 0.00 0.00	0 0.00 0.00	2 4.00 .28	6.40
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	3.79
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	4.74
SSE	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	1 2.00 .14	1 2.00 .14	0 0.00 0.00	3 6.00 .42	6.01
S	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	2 4.00 .28	1 2.00 .14	4 8.00 .56	7.82
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.00 .42	4 8.00 .56	5 10.00 .69	12 24.00 1.67	10.90
SW	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 16.00 1.11	9 18.00 1.25	11.96
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	1 2.00 .14	7.58
W	0 0.00 0.00	0 0.00 0.00	2 4.00 .28	2 4.00 .28	0 0.00 0.00	0 0.00 0.00	4 8.00 .56	5.45
WNW	0 0.00 0.00	1 2.00 .14	1 2.00 .14	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	3 6.00 .42	4.27
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	1 2.00 .14	12.80
NNW	0 0.00 0.00	0 0.00 0.00	2 4.00 .28	1 2.00 .14	0 0.00 0.00	1 2.00 .14	4 8.00 .56	6.40
N	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	1 2.00 .14	3 6.00 .42	7.11
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	3 6.00 .42	9 18.00 1.25	12 24.00 1.67	9 18.00 1.25	17 34.00 2.36	50 100.00 6.94	8.51

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-83

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	5 7.04 .69	10 14.08 1.39	0 0.00 0.00	18 25.35 2.50	7.06
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	5.69
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	2.37
SE	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	1 1.41 .14	1 1.41 .14	0 0.00 0.00	5 7.04 .69	5.59
SSE	0 0.00 0.00	0 0.00 0.00	2 2.82 .28	3 4.23 .42	3 4.23 .42	0 0.00 0.00	8 11.27 1.11	6.46
S	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	3 4.23 .42	3 4.23 .42	0 0.00 0.00	7 9.86 .97	6.91
SSW	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	4 5.63 .56	1 1.41 .14	2 2.82 .28	8 11.27 1.11	8.18
SW	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	3 4.23 .42	1 1.41 .14	2 2.82 .28	7 9.86 .97	8.74
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	6.64
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	1 1.41 .14	7.58
WNW	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	4.74
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	1 1.41 .14	2 2.82 .28	9.01
NNW	0 0.00 0.00	2 2.82 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	3 4.23 .42	5.37
N	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	0 0.00 0.00	3 4.23 .42	2 2.82 .28	8 11.27 1.11	7.82
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	3 4.23 .42	15 21.13 2.08	22 30.99 3.06	23 32.39 3.19	8 11.27 1.11	71 100.00 9.86	7.12

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-84

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	3	4	5	5	19	7.66
	0.00	.39	1.18	1.57	1.97	1.97	7.48	
	0.00	.14	.42	.56	.83	.69	2.64	
NE	0	0	3	13	3	0	19	6.11
	0.00	0.00	1.18	5.12	1.18	0.00	7.48	
	0.00	0.00	.42	1.81	.42	0.00	2.64	
ENE	0	0	4	3	1	0	8	5.51
	0.00	0.00	1.57	1.18	.39	0.00	3.15	
	0.00	0.00	.56	.42	.14	0.00	1.11	
E	0	1	0	5	0	0	6	5.37
	0.00	.39	0.00	1.97	0.00	0.00	2.36	
	0.00	.14	0.00	.69	0.00	0.00	.83	
ESE	1	3	3	10	0	0	17	4.69
	.39	1.18	1.18	3.94	0.00	0.00	6.69	
	.14	.42	.42	1.39	0.00	0.00	2.36	
SE	0	7	8	9	0	0	24	4.32
	0.00	2.76	3.15	3.54	0.00	0.00	9.45	
	0.00	.97	1.11	1.25	0.00	0.00	3.33	
SSE	2	6	9	5	9	1	32	5.46
	.79	2.36	3.54	1.97	3.54	.39	12.60	
	.28	.83	1.25	.69	1.25	.14	4.44	
S	1	5	10	2	7	2	27	5.58
	.39	1.97	3.94	.79	2.76	.79	10.63	
	.14	.69	1.39	.28	.97	.28	3.75	
SSW	1	0	6	2	5	9	23	8.55
	.39	0.00	2.36	.79	1.97	3.54	9.06	
	.14	0.00	.83	.28	.69	1.25	3.19	
SW	0	2	1	3	4	9	19	10.23
	0.00	.79	.39	1.18	1.57	3.54	7.48	
	0.00	.28	.14	.42	.56	1.25	2.64	
WSW	0	0	1	1	3	1	6	8.93
	0.00	0.00	.39	.39	1.18	.39	2.36	
	0.00	0.00	.14	.14	.42	.14	.83	
W	1	1	2	1	2	1	8	5.39
	.39	.39	.79	.39	.79	.39	3.15	
	.14	.14	.28	.14	.28	.14	1.11	
WNW	1	0	2	1	0	0	4	3.79
	.39	0.00	.79	.39	0.00	0.00	1.57	
	.14	0.00	.28	.14	0.00	0.00	.56	
NW	0	2	2	0	2	0	6	5.06
	0.00	.79	.79	0.00	.79	0.00	2.36	
	0.00	.28	.28	0.00	.28	0.00	.83	
NNW	0	0	1	7	0	8	16	9.45
	0.00	0.00	.39	2.76	0.00	3.15	6.30	
	0.00	0.00	.14	.97	0.00	1.11	2.22	
N	0	0	0	9	5	6	20	9.22
	0.00	0.00	0.00	3.54	1.97	2.36	7.87	
	0.00	0.00	0.00	1.25	.69	.83	2.78	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	7	28	55	75	47	42	254	6.76
	2.76	11.02	21.65	29.53	18.50	16.54	100.00	
	.97	3.89	7.64	10.42	6.53	5.83	35.28	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-85

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	2	1	0	0	4	4.03
	0.00	.53	1.07	.53	0.00	0.00	2.14	
	0.00	.14	.28	.14	0.00	0.00	.56	
NE	0	1	5	1	0	0	7	4.13
	0.00	.53	2.67	.53	0.00	0.00	3.74	
	0.00	.14	.69	.14	0.00	0.00	.97	
ENE	0	1	3	0	0	0	4	3.32
	0.00	.53	1.60	0.00	0.00	0.00	2.14	
	0.00	.14	.42	0.00	0.00	0.00	.56	
E	0	0	4	1	0	0	5	4.36
	0.00	0.00	2.14	.53	0.00	0.00	2.67	
	0.00	0.00	.56	.14	0.00	0.00	.69	
ESE	0	0	3	0	0	0	3	3.95
	0.00	0.00	1.60	0.00	0.00	0.00	1.60	
	0.00	0.00	.42	0.00	0.00	0.00	.42	
SE	0	4	3	11	3	0	21	5.35
	0.00	2.14	1.60	5.88	1.60	0.00	11.23	
	0.00	.56	.42	1.53	.42	0.00	2.92	
SSE	3	2	8	10	9	0	32	5.52
	1.60	1.07	4.28	5.35	4.81	0.00	17.11	
	.42	.28	1.11	1.39	1.25	0.00	4.44	
S	2	1	17	4	4	0	28	4.52
	1.07	.53	9.09	2.14	2.14	0.00	14.97	
	.28	.14	2.36	.56	.56	0.00	3.89	
SSW	0	0	1	2	17	6	26	8.82
	0.00	0.00	.53	1.07	9.09	3.21	13.90	
	0.00	0.00	.14	.28	2.36	.83	3.61	
SW	0	0	0	4	8	12	24	9.74
	0.00	0.00	0.00	2.14	4.28	6.42	12.83	
	0.00	0.00	0.00	.56	1.11	1.67	3.33	
WSW	0	0	0	1	3	0	4	8.53
	0.00	0.00	0.00	.53	1.60	0.00	2.14	
	0.00	0.00	0.00	.14	.42	0.00	.56	
W	0	0	1	0	8	0	9	8.16
	0.00	0.00	.53	0.00	4.28	0.00	4.81	
	0.00	0.00	.14	0.00	1.11	0.00	1.25	
WNW	0	0	1	0	0	0	1	4.27
	0.00	0.00	.53	0.00	0.00	0.00	.53	
	0.00	0.00	.14	0.00	0.00	0.00	.14	
NW	0	0	0	1	3	1	5	8.82
	0.00	0.00	0.00	.53	1.60	.53	2.67	
	0.00	0.00	0.00	.14	.42	.14	.69	
NNW	0	1	2	1	0	0	4	4.38
	0.00	.53	1.07	.53	0.00	0.00	2.14	
	0.00	.14	.28	.14	0.00	0.00	.56	
N	0	0	3	5	1	0	9	5.90
	0.00	0.00	1.60	2.67	.53	0.00	4.81	
	0.00	0.00	.42	.69	.14	0.00	1.25	
CALM	1						1	CALM
	.53						.53	
	.14						.14	
TOTAL	6	11	53	42	56	19	187	6.40
	3.21	5.88	28.34	22.46	29.95	10.16	100.00	
	.83	1.53	7.36	5.83	7.78	2.64	25.97	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-86

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	2.84
ENE	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	2.37
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	6.16
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	6.16
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	1 1.92 .14	0 0.00 0.00	3 5.77 .42	6.63
SSE	0 0.00 0.00	0 0.00 0.00	3 5.77 .42	2 3.85 .28	2 3.85 .28	0 0.00 0.00	7 13.46 .97	6.30
S	1 1.92 .14	2 3.85 .28	4 7.69 .56	5 9.62 .69	0 0.00 0.00	0 0.00 0.00	12 23.08 1.67	4.30
SSW	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	3 5.77 .42	0 0.00 0.00	4 7.69 .56	7.46
SW	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	3 5.77 .42	0 0.00 0.00	0 0.00 0.00	4 7.69 .56	5.81
WSW	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	3.79
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	5.21
WNW	0 0.00 0.00	0 0.00 0.00	4 7.69 .56	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	5 9.62 .69	4.27
NW	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	4.74
NNW	0 0.00 0.00	1 1.92 .14	1 1.92 .14	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	4 7.69 .56	4.86
N	0 0.00 0.00	0 0.00 0.00	3 5.77 .42	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	4 7.69 .56	4.86
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 1.92 .14	6 11.54 .83	18 34.62 2.50	21 40.38 2.92	6 11.54 .83	0 0.00 0.00	52 100.00 7.22	5.21

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-87

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	3.55
NE	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	2.84
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	4.27
SSE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	2 7.69 .28	5.45
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	5.22
SW	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	4.74
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	3 11.54 .42	5.21
NW	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	7 26.92 .97	0 0.00 0.00	0 0.00 0.00	8 30.77 1.11	5.69
NNW	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	3 11.54 .42	4.74
N	0 0.00 0.00	1 3.85 .14	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 11.54 .42	3.63
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	2 7.69 .28	12 46.15 1.67	11 42.31 1.53	1 3.85 .14	0 0.00 0.00	26 100.00 3.61	4.87

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-88

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00	3 .42	12 1.67	11 1.53	22 3.06	5 .69	53 7.36	6.84
NE	0 0.00	4 .56	8 1.11	19 2.64	4 .56	0 0.00	35 4.86	5.50
ENE	0 0.00	2 .28	7 .97	4 .56	1 .14	0 0.00	14 1.94	4.67
E	0 0.00	1 .14	5 .69	7 .97	0 0.00	0 0.00	13 1.81	4.92
ESE	1 .14	4 .56	6 .83	12 1.67	0 0.00	0 0.00	23 3.19	4.62
SE	0 0.00	11 1.53	16 2.22	23 3.19	5 .69	0 0.00	55 7.64	4.96
SSE	5 .69	8 1.11	24 3.33	21 2.92	25 3.47	1 .14	84 11.67	5.67
S	4 .56	8 1.11	33 4.58	14 1.94	17 2.36	3 .42	79 10.97	5.27
SSW	1 .14	0 0.00	10 1.39	12 1.67	30 4.17	25 3.47	78 10.83	8.90
SW	0 0.00	3 .42	4 .56	13 1.81	14 1.94	39 5.42	73 10.14	10.56
WSW	0 0.00	0 0.00	2 .28	3 .42	7 .97	2 .28	14 1.94	9.77
W	1 .14	1 .14	6 .83	4 .56	11 1.53	1 .14	24 3.33	6.50
WNW	1 .14	1 .14	10 1.39	6 .83	0 0.00	0 0.00	18 2.50	4.42
NW	0 0.00	3 .42	5 .69	10 1.39	5 .69	4 .56	27 3.75	6.71
NNW	0 0.00	6 .83	9 1.25	15 2.08	0 0.00	20 2.78	50 6.94	7.92
N	0 0.00	2 .28	18 2.50	23 3.19	18 2.50	18 2.50	79 10.97	7.66
CALM	1 .14						1 .14	CALM
TOTAL	14 1.94	57 7.92	175 24.31	197 27.36	159 22.08	118 16.39	720 100.00	6.89

NUMBER OF VALID OBSERVATIONS 720 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 720 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-89

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	2 2.78 .27	0 0.00 0.00	0 0.00 0.00	3 4.17 .40	5.21
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	5.69
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	4.74
ESE	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	3.79
SE	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	4.52
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	10 13.89 1.34	1 1.39 .13	11 15.28 1.48	9.01
S	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	6 8.33 .81	8 11.11 1.08	10 13.89 1.34	25 34.72 3.36	9.31
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 6.94 .67	1 1.39 .13	6 8.33 .81	9.08
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	2 2.78 .27	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	3 4.17 .40	7 9.72 .94	7.99
W	0 0.00 0.00	2 2.78 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	2.61
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	7 9.72 .94	3 4.17 .40	11 15.28 1.48	8.92
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	1 1.39 .13	9.48
N	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	2.84
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	7 9.72 .94	4 5.56 .54	10 13.89 1.34	33 45.83 4.44	18 25.00 2.42	72 100.00 9.68	8.31

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-90

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY.1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 46.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	5.21
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	4.74
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	1 1.39 .13	2 2.78 .27	6 8.33 .81	1 1.39 .13	1 1.39 .13	11 15.28 1.48	6.39
SSE	0 0.00 0.00	4 5.56 .54	1 1.39 .13	6 8.33 .81	3 4.17 .40	4 5.56 .54	18 25.00 2.42	6.78
S	0 0.00 0.00	0 0.00 0.00	5 6.94 .67	10 13.89 1.34	4 5.56 .54	7 9.72 .94	26 36.11 3.49	7.62
SSW	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	6 8.33 .81	1 1.39 .13	8 11.11 1.08	8.12
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	1 1.39 .13	0 0.00 0.00	2 2.78 .27	7.34
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	2 2.78 .27	12.33
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	1 1.39 .13	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	2.51
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	1 1.39 .13	8.53
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 1.39 .13	5 6.94 .67	11 15.28 1.48	24 33.33 3.23	16 22.22 2.15	15 20.83 2.02	72 100.00 9.68	7.20

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-91

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	5.21
E	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	3.32
ESE	0 0.00 0.00	1 1.92 .13	1 1.92 .13	4 7.69 .54	0 0.00 0.00	0 0.00 0.00	6 11.54 .81	5.16
SE	0 0.00 0.00	0 0.00 0.00	5 9.62 .67	5 9.62 .67	0 0.00 0.00	1 1.92 .13	11 21.15 1.48	5.74
SSE	0 0.00 0.00	2 3.85 .27	1 1.92 .13	2 3.85 .27	3 5.77 .40	2 3.85 .27	10 19.23 1.34	7.29
S	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	4 7.69 .54	2 3.85 .27	6 11.54 .81	14 26.92 1.88	8.63
SSW	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	1 1.92 .13	2 3.85 .27	0 0.00 0.00	4 7.69 .54	6.28
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	1 1.92 .13	9.48
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	6.16
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	6.64
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	1 1.92 .13	7.58
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 1.92 .13	3 5.77 .40	10 19.23 1.34	20 38.46 2.69	9 17.31 1.21	9 17.31 1.21	52 100.00 6.99	6.82

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-92

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY.1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 .69 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .69 .27	2.37
NE	0 0.00 0.00	2 .69 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .69 .27	2.13
ENE	0 0.00 0.00	1 .35 .13	4 1.39 .54	5 1.74 .67	2 .69 .27	0 0.00 0.00	12 4.17 1.61	5.45
E	1 .35 .13	1 .35 .13	6 2.08 .81	11 3.82 1.48	1 .35 .13	0 0.00 0.00	20 6.94 2.69	5.07
ESE	1 .35 .13	2 .69 .27	2 .69 .27	13 4.51 1.75	5 1.74 .67	5 1.74 .67	28 9.72 3.76	6.87
SE	1 .35 .13	4 1.39 .54	7 2.43 .94	8 2.78 1.08	2 .69 .27	3 1.04 .40	25 8.68 3.36	5.77
SSE	0 0.00 0.00	4 1.39 .54	5 1.74 .67	19 6.60 2.55	20 6.94 2.69	7 2.43 .94	55 19.10 7.39	7.45
S	0 0.00 0.00	10 3.47 1.34	16 5.56 2.15	26 9.03 3.49	21 7.29 2.82	16 5.56 2.15	89 30.90 11.96	6.94
SSW	0 0.00 0.00	1 .35 .13	4 1.39 .54	2 .69 .27	6 2.08 .81	7 2.43 .94	20 6.94 2.69	8.65
SW	0 0.00 0.00	0 0.00 0.00	1 .35 .13	2 .69 .27	1 .35 .13	5 2.08 .81	10 3.47 1.34	10.24
WSW	1 .35 .13	0 0.00 0.00	2 .69 .27	1 .35 .13	0 0.00 0.00	0 0.00 0.00	4 1.39 .54	4.15
W	0 0.00 0.00	0 0.00 0.00	1 .35 .13	2 .69 .27	2 .69 .27	1 .35 .13	6 2.08 .81	7.19
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .69 .27	0 0.00 0.00	0 0.00 0.00	2 .69 .27	5.69
NW	0 0.00 0.00	1 .35 .13	0 0.00 0.00	0 0.00 0.00	4 1.39 .54	1 .35 .13	6 2.08 .81	7.42
NNW	0 0.00 0.00	1 .35 .13	0 0.00 0.00	1 .35 .13	0 0.00 0.00	0 0.00 0.00	2 .69 .27	4.26
N	1 .35 .13	1 .35 .13	1 .35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.04 .40	2.21
CALM	2 .69 .27						2 .69 .27	CALM
TOTAL	7 2.43 .94	30 10.42 4.03	49 17.01 6.59	92 31.94 12.37	64 22.22 8.60	46 15.97 6.18	288 100.00 38.71	6.76

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-93

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY.1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 95.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	2	0	0	0	2	4.03
	0.00	0.00	.96	0.00	0.00	0.00	.95	
	0.00	0.00	.27	0.00	0.00	0.00	.27	
NE	0	0	1	1	0	0	2	4.26
	0.00	0.00	.48	.48	0.00	0.00	.96	
	0.00	0.00	.13	.13	0.00	0.00	.27	
ENE	0	0	3	3	0	0	6	4.90
	0.00	0.00	1.44	1.44	0.00	0.00	2.88	
	0.00	0.00	.40	.40	0.00	0.00	.81	
E	1	1	1	3	0	0	6	4.18
	.48	.48	.48	1.44	0.00	0.00	2.88	
	.13	.13	.13	.40	0.00	0.00	.81	
ESE	0	0	1	11	2	0	14	6.13
	0.00	0.00	.48	5.29	.96	0.00	6.73	
	0.00	0.00	.13	1.48	.27	0.00	1.88	
SE	0	2	5	13	11	1	32	6.41
	0.00	.96	2.40	6.25	5.29	.48	15.38	
	0.00	.27	.67	1.75	1.48	.13	4.30	
SSE	0	0	6	17	19	2	44	7.26
	0.00	0.00	2.88	8.17	9.13	.96	21.15	
	0.00	0.00	.81	2.28	2.55	.27	5.91	
S	0	2	12	24	15	4	57	6.73
	0.00	.96	5.77	11.54	7.21	1.92	27.40	
	0.00	.27	1.61	3.23	2.02	.54	7.66	
SSW	0	1	0	7	4	2	14	7.47
	0.00	.48	0.00	3.37	1.92	.96	6.73	
	0.00	.13	0.00	.94	.54	.27	1.88	
SW	0	1	2	1	1	1	6	6.48
	0.00	.48	.96	.48	.48	.48	2.88	
	0.00	.13	.27	.13	.13	.13	.81	
WSW	0	0	1	1	0	0	2	4.98
	0.00	0.00	.48	.48	0.00	0.00	.96	
	0.00	0.00	.13	.13	0.00	0.00	.27	
W	0	1	1	4	1	0	7	5.62
	0.00	.48	.48	1.92	.48	0.00	3.37	
	0.00	.13	.13	.54	.13	0.00	.94	
WNW	0	0	0	1	2	0	3	7.58
	0.00	0.00	0.00	.48	.96	0.00	1.44	
	0.00	0.00	0.00	.13	.27	0.00	.40	
NW	0	1	0	0	2	0	3	6.48
	0.00	.48	0.00	0.00	.96	0.00	1.44	
	0.00	.13	0.00	0.00	.27	0.00	.40	
NNW	0	2	0	2	1	0	5	4.93
	0.00	.96	0.00	.96	.48	0.00	2.40	
	0.00	.27	0.00	.27	.13	0.00	.67	
N	0	1	1	3	0	0	5	5.21
	0.00	.48	.48	1.44	0.00	0.00	2.40	
	0.00	.13	.13	.40	0.00	0.00	.67	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	12	36	91	58	10	208	6.49
	.48	5.77	17.31	43.75	27.88	4.81	100.00	
	.13	1.61	4.82	12.23	7.80	1.34	27.96	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-94

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	4.74
ENE	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	1.42
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	4.74
SE	0 0.00 0.00	0 0.00 0.00	3 5.88 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.88 .40	4.11
SSE	0 0.00 0.00	1 1.96 .13	7 13.73 .94	2 3.92 .27	0 0.00 0.00	0 0.00 0.00	10 19.61 1.34	4.22
S	0 0.00 0.00	2 3.92 .27	5 9.80 .67	2 3.92 .27	3 5.88 .40	0 0.00 0.00	12 23.53 1.61	5.06
SSW	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	4 7.84 .54	1 1.96 .13	0 0.00 0.00	6 11.76 .81	6.16
SW	0 0.00 0.00	1 1.96 .13	1 1.96 .13	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	3 5.88 .40	4.26
WSW	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	3.79
W	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	3.32
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	6.16
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	1 1.96 .13	0 0.00 0.00	2 3.92 .27	7.34
NNW	1 1.96 .13	1 1.96 .13	0 0.00 0.00	2 3.92 .27	0 0.00 0.00	0 0.00 0.00	4 7.84 .54	4.03
N	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	4.50
CALM	1 1.96 .13						1 1.96 .13	CALM
TOTAL	3 5.88 .40	5 9.80 .67	23 45.10 3.09	15 29.41 2.02	5 9.80 .67	0 0.00 0.00	51 100.00 6.85	4.70

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-95

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	1 100.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 100.00 .13	3.79
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	0 0.00 0.00	1 100.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 100.00 .13	3.79

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-96

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00	2 .27	3 .40	3 .40	0 0.00	0 0.00	8 1.08	4.21
NE	0 0.00	2 .27	2 .27	4 .54	0 0.00	0 0.00	8 1.08	4.21
ENE	1 .13	1 .13	8 1.08	9 1.21	2 .27	0 0.00	21 2.82	5.06
E	3 .40	2 .27	8 1.08	15 2.02	1 .13	0 0.00	29 3.90	4.76
ESE	1 .13	3 .40	6 .81	28 3.76	7 .94	5 .67	50 6.72	6.35
SE	1 .13	7 .94	23 3.09	32 4.30	14 1.88	6 .81	83 11.16	6.02
SSE	0 0.00	11 1.48	20 2.69	46 6.18	55 7.39	16 2.15	148 19.89	7.20
S	0 0.00	15 2.02	40 5.38	72 9.68	53 7.12	43 5.78	223 29.97	7.24
SSW	0 0.00	2 .27	7 .94	14 1.88	24 3.23	11 1.48	58 7.80	7.92
SW	0 0.00	2 .27	4 .54	5 .67	4 .54	7 .94	22 2.96	8.10
WSW	1 .13	2 .27	4 .54	3 .40	2 .27	5 .67	17 2.28	6.89
W	0 0.00	3 .40	3 .40	6 .81	3 .40	1 .13	16 2.15	5.69
WNW	1 .13	0 0.00	1 .13	6 .81	2 .27	0 0.00	10 1.34	5.83
NW	0 0.00	3 .40	0 0.00	1 .13	16 2.15	4 .54	24 3.23	8.04
NNW	1 .13	4 .54	1 .13	5 .67	2 .27	0 0.00	13 1.75	4.41
N	1 .13	3 .40	4 .54	3 .40	0 0.00	0 0.00	11 1.48	4.05
CALM	3 .40						3 .40	CALM
TOTAL	13 1.75	62 8.33	134 18.01	252 33.87	185 24.87	98 13.17	744 100.00	6.74

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-97

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .47 .14	3 1.42 .42	2 .95 .28	1 .47 .14	5 2.37 .69	1 .47 .14	13 6.16 1.81	5.91
NE	1 .47 .14	4 1.90 .56	2 .95 .28	1 .47 .14	0 0.00 0.00	0 0.00 0.00	8 3.79 1.11	2.72
ENE	1 .47 .14	3 1.42 .42	2 .95 .28	1 .47 .14	0 0.00 0.00	0 0.00 0.00	7 3.32 .97	3.05
E	0 0.00 0.00	5 2.37 .69	4 1.90 .55	1 .47 .14	0 0.00 0.00	0 0.00 0.00	10 4.74 1.39	3.18
ESE	0 0.00 0.00	1 .47 .14	2 .95 .28	0 0.00 0.00	2 .95 .28	1 .47 .14	6 2.84 .83	6.87
SE	0 0.00 0.00	4 1.90 .56	6 2.84 .83	7 3.32 .97	2 .95 .28	3 1.42 .42	22 10.43 3.06	5.62
SSE	1 .47 .14	0 0.00 0.00	1 .47 .14	11 5.21 1.53	3 1.42 .42	1 .47 .14	17 8.06 2.36	6.58
S	0 0.00 0.00	0 0.00 0.00	2 .95 .28	2 .95 .28	5 2.37 .69	8 3.79 1.11	17 8.06 2.36	9.29
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .47 .14	2 .95 .28	3 1.42 .42	6 2.84 .83	10.27
SW	0 0.00 0.00	2 .95 .28	5 2.37 .69	1 .47 .14	4 1.90 .56	1 .47 .14	13 6.16 1.81	5.65
WSW	0 0.00 0.00	0 0.00 0.00	2 .95 .28	1 .47 .14	2 .95 .28	0 0.00 0.00	5 2.37 .69	6.07
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .95 .28	0 0.00 0.00	0 0.00 0.00	2 .95 .28	6.88
WNW	0 0.00 0.00	0 0.00 0.00	2 .95 .28	2 .95 .28	5 2.37 .69	0 0.00 0.00	9 4.27 1.25	6.95
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .47 .14	5 2.37 .69	0 0.00 0.00	6 2.84 .83	8.53
NNW	2 0.00 0.00	2 .95 .28	14 6.64 1.94	4 1.90 .56	13 6.16 1.81	1 .47 .14	34 16.11 4.72	6.08
N	2 .95 .28	7 3.32 .97	11 5.21 1.53	3 1.42 .42	3 1.42 .42	10 4.74 1.39	36 17.06 5.00	6.32
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	6 2.84 .83	31 14.69 4.31	55 26.07 7.64	39 18.48 5.42	51 24.17 7.08	29 13.74 4.03	211 100.00 29.31	6.22

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-98

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	1 1.61 .14	7.58
NE	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	5.53
ENE	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	4 6.45 .56	5.93
E	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	4 6.45 .56	4.86
ESE	0 0.00 0.00	1 1.61 .14	1 1.61 .14	0 0.00 0.00	4 6.45 .56	1 1.61 .14	7 11.29 .97	8.06
SE	0 0.00 0.00	1 1.61 .14	1 1.61 .14	4 6.45 .56	2 3.23 .28	0 0.00 0.00	8 12.90 1.11	5.76
SSE	0 0.00 0.00	2 3.23 .28	0 0.00 0.00	1 1.61 .14	1 1.61 .14	0 0.00 0.00	4 6.45 .56	4.74
S	0 0.00 0.00	2 3.23 .28	0 0.00 0.00	2 3.23 .28	2 3.23 .28	2 3.23 .28	8 12.90 1.11	7.76
SSW	0 0.00 0.00	1 1.61 .14	1 1.61 .14	1 1.61 .14	1 1.61 .14	1 1.61 .14	5 8.06 .69	6.73
SW	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	3 4.84 .42	2 3.23 .28	0 0.00 0.00	6 9.68 .83	6.32
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	6.16
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	0 0.00 0.00	2 3.23 .28	7.82
WNW	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	3.79
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	7.11
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	5.69
N	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	0 0.00 0.00	1 1.61 .14	1 1.61 .14	5 8.06 .69	6.35
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	7 11.29 .97	13 20.97 1.81	21 33.87 2.92	16 25.81 2.22	5 8.06 .69	62 100.00 8.61	6.43

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-99

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	3.31
NE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	5.22
ENE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	5.45
E	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	2 7.69 .28	5.42
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1 3.85 .14	10.90
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	5.92
S	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	2 7.69 .28	0 0.00 0.00	1 3.85 .14	4 15.38 .56	6.52
SSW	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	2 7.69 .28	5.68
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	8.06
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	8.06
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	3 11.54 .42	6.16
N	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	3 11.54 .42	0 0.00 0.00	0 0.00 0.00	4 15.38 .56	6.04
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 3.85 .14	3 11.54 .42	5 19.23 .69	10 38.46 1.39	4 15.38 .56	3 11.54 .42	26 100.00 3.61	6.11

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-100

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 95.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7535-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	3 1.72 .42	2 1.15 .28	2 1.15 .28	0 0.00 0.00	7 4.02 .97	6.03
NE	0 0.00 0.00	0 0.00 0.00	2 1.15 .28	2 1.15 .28	2 1.15 .28	0 0.00 0.00	6 3.45 .83	6.08
ENE	0 0.00 0.00	0 0.00 0.00	2 1.15 .28	4 2.30 .56	3 1.72 .42	1 .57 .14	10 5.75 1.39	6.87
E	0 0.00 0.00	0 0.00 0.00	3 1.72 .42	15 8.62 2.08	10 5.75 1.39	2 1.15 .28	30 17.24 4.17	7.16
ESE	0 0.00 0.00	0 0.00 0.00	5 2.87 .69	3 1.72 .42	7 4.02 .97	0 0.00 0.00	15 8.62 2.08	6.89
SE	0 0.00 0.00	1 .57 .14	2 1.15 .28	13 7.47 1.81	4 2.30 .56	0 0.00 0.00	20 11.49 2.78	6.38
SSE	0 0.00 0.00	1 .57 .14	2 1.15 .28	3 1.72 .42	6 3.45 .83	0 0.00 0.00	12 6.90 1.67	6.71
S	0 0.00 0.00	2 1.15 .28	1 .57 .14	4 2.30 .56	8 4.60 1.11	4 2.30 .56	19 10.92 2.64	7.96
SSW	0 0.00 0.00	0 0.00 0.00	1 .57 .14	1 .57 .14	7 4.02 .97	3 1.72 .42	12 6.90 1.67	9.28
SW	0 0.00 0.00	0 0.00 0.00	1 .57 .14	4 2.30 .56	2 1.15 .28	1 .57 .14	8 4.60 1.11	7.11
WSW	0 0.00 0.00	1 .57 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .57 .14	1.90
W	0 0.00 0.00	1 .57 .14	2 1.15 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.72 .42	3.64
WNW	1 .57 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .57 .14	1.42
NW	0 0.00 0.00	1 .57 .14	0 0.00 0.00	0 0.00 0.00	1 .57 .14	0 0.00 0.00	2 1.15 .28	4.74
NNW	0 0.00 0.00	1 .57 .14	1 .57 .14	5 2.87 .69	3 1.72 .42	1 .57 .14	11 6.32 1.53	7.24
N	0 0.00 0.00	0 0.00 0.00	1 .57 .14	8 4.60 1.11	2 1.15 .28	6 3.45 .83	17 9.77 2.36	8.06
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 .57 .14	8 4.60 1.11	26 14.94 3.61	64 36.78 8.89	57 32.76 7.92	18 10.34 2.50	174 100.00 24.17	7.09

KEY XX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-101

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 .58 .14	1 .58 .14	1 .58 .14	0 0.00 0.00	3 1.74 .42	6.16
NE	1 .58 .14	0 0.00 0.00	1 .58 .14	4 2.33 .56	4 2.33 .56	0 0.00 0.00	10 5.81 1.39	6.21
ENE	0 0.00 0.00	0 0.00 0.00	6 3.49 .83	1 .58 .14	1 .58 .14	0 0.00 0.00	8 4.65 1.11	4.80
E	0 0.00 0.00	1 .58 .14	2 1.16 .28	4 2.33 .56	0 0.00 0.00	0 0.00 0.00	7 4.07 .97	4.74
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .58 .14	9 5.23 1.25	0 0.00 0.00	10 5.81 1.39	7.72
SE	0 0.00 0.00	2 1.16 .28	3 1.74 .42	7 4.07 .97	6 3.49 .83	0 0.00 0.00	18 10.47 2.50	6.13
SSE	0 0.00 0.00	0 0.00 0.00	1 .58 .14	9 5.23 1.25	7 4.07 .97	1 .58 .14	18 10.47 2.50	7.45
S	1 .58 .14	2 1.16 .28	0 0.00 0.00	10 5.81 1.39	14 8.14 1.94	1 .58 .14	28 16.28 3.89	7.06
SSW	0 0.00 0.00	1 .58 .14	2 1.16 .28	5 2.91 .69	4 2.33 .56	1 .58 .14	13 7.56 1.81	6.93
SW	0 0.00 0.00	3 1.74 .42	0 0.00 0.00	2 1.16 .28	8 4.65 1.11	4 2.33 .56	17 9.88 2.36	7.95
WSW	0 0.00 0.00	0 0.00 0.00	1 .58 .14	1 .58 .14	2 1.16 .28	0 0.00 0.00	4 2.33 .56	6.28
W	0 0.00 0.00	1 .58 .14	1 .58 .14	0 0.00 0.00	1 .58 .14	0 0.00 0.00	3 1.74 .42	6.16
WNW	1 .58 .14	2 1.16 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.74 .42	2.05
NW	2 1.16 .28	1 .58 .14	1 .58 .14	2 1.16 .28	0 0.00 0.00	0 0.00 0.00	6 3.49 .83	3.58
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.16 .28	1 .58 .14	1 .58 .14	4 2.33 .56	9.72
N	1 .58 .14	1 .58 .14	2 1.16 .28	7 4.07 .97	6 3.49 .83	3 1.74 .42	20 11.63 2.78	6.80
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	6 3.49 .83	14 8.14 1.94	21 12.21 2.92	56 32.56 7.78	63 36.63 8.75	12 6.98 1.67	172 100.00 23.89	6.64

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-102

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 2.22 .14	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	3 6.67 .42	4.74
NE	0 0.00 0.00	1 2.22 .14	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.67 .42	3.47
ENE	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	3.40
E	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	2.61
ESE	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	3.79
SE	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	5 11.11 .69	0 0.00 0.00	0 0.00 0.00	7 15.56 .97	5.21
SSE	0 0.00 0.00	1 2.22 .14	0 0.00 0.00	1 2.22 .14	1 2.22 .14	0 0.00 0.00	3 6.67 .42	5.21
S	1 2.22 .14	1 2.22 .14	0 0.00 0.00	2 4.44 .28	1 2.22 .14	0 0.00 0.00	5 11.11 .69	4.74
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	5 11.11 .69	0 0.00 0.00	7 15.56 .97	7.99
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	6.16
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	1 2.22 .14	0 0.00 0.00	2 4.44 .28	6.87
W	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	2.13
WNW	0 0.00 0.00	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	1.90
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	5.21
NNW	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	3.55
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	5.92
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 2.22 .14	11 24.44 1.53	7 15.56 .97	18 40.00 2.50	8 17.78 1.11	0 0.00 0.00	45 100.00 6.25	5.08

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-103

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	5 6.67 .28	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 10.00 .42	2.84
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	1 3.33 .14	7.11
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	4 13.33 .56	3 10.00 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 23.33 .97	3.45
WSW	0 0.00 0.00	2 6.67 .28	0 0.00 0.00	2 6.67 .28	1 3.33 .14	0 0.00 0.00	5 16.67 .69	5.12
W	0 0.00 0.00	5 16.67 .69	2 6.67 .28	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	9 30.00 1.25	3.48
WNW	0 0.00 0.00	1 3.33 .14	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 10.00 .42	3.16
NW	0 0.00 0.00	1 3.33 .14	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	3.08
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	15 50.00 2.08	9 30.00 1.25	5 16.67 .69	1 3.33 .14	0 0.00 0.00	30 100.00 4.17	3.74

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-104

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 96.93 METERS
TABLE GENERATED: 01/03/78. 13.17.33.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .14	5 .69	7 .97	6 .83	9 1.25	1 .14	29 4.03	5.72
NE	2 .28	5 .69	10 1.39	9 1.25	6 .83	0 0.00	32 4.44	4.93
ENE	1 .14	3 .42	14 1.94	10 1.39	4 .56	1 .14	33 4.58	5.17
E	0 0.00	8 1.11	12 1.67	22 3.06	11 1.53	2 .28	55 7.64	5.75
ESE	0 0.00	2 .28	9 1.25	4 .56	22 3.06	3 .42	40 5.56	7.32
SE	0 0.00	12 1.67	13 1.81	36 5.00	14 1.94	3 .42	78 10.83	5.80
SSE	1 .14	4 .56	4 .56	27 3.75	18 2.50	2 .28	56 7.78	6.66
S	2 .28	8 1.11	3 .42	23 3.19	30 4.17	16 2.22	82 11.39	7.63
SSW	0 0.00	3 .42	4 .56	10 1.39	20 2.78	8 1.11	45 6.25	8.09
SW	0 0.00	9 1.25	10 1.39	11 1.53	17 2.36	6 .83	53 7.36	6.45
WSW	0 0.00	3 .42	3 .42	7 .97	6 .83	0 0.00	19 2.64	5.74
W	0 0.00	9 1.25	5 .69	4 .56	3 .42	1 .14	22 3.06	4.65
WNW	2 .28	4 .56	5 .69	2 .28	5 .69	0 0.00	18 2.50	4.74
NW	2 .28	3 .42	2 .28	6 .83	6 .83	0 0.00	19 2.64	5.57
NNW	1 .14	3 .42	17 2.36	13 1.81	17 2.36	4 .56	55 7.64	6.48
N	3 .42	8 1.11	18 2.50	23 3.19	12 1.67	20 2.78	84 11.67	6.77
CALM	0 0.00						0 0.00	CALM
TOTAL	15 2.08	89 12.36	136 18.89	213 29.58	200 27.78	67 9.31	720 100.00	6.37

NUMBER OF VALID OBSERVATIONS	720	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	720	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-105

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976 TO JUNE,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	30	38	15	3	0	86	3.95
	0.00	2.05	2.60	1.02	.20	0.00	5.87	
	0.00	.34	.43	.17	.03	0.00	.98	
NE	1	17	16	3	3	0	40	3.44
	.07	1.16	1.10	.20	0.00	0.00	2.73	
	.01	.19	.25	.03	0.00	0.00	.45	
ENE	0	22	12	0	0	0	34	3.01
	0.00	1.50	.82	0.00	0.00	0.00	2.32	
	0.00	.25	.14	0.00	0.00	0.00	.39	
E	0	14	23	3	0	0	40	3.63
	0.00	.96	1.57	.20	0.00	0.00	2.73	
	0.00	.16	.26	.03	0.00	0.00	.46	
ESE	0	14	24	3	3	0	44	3.88
	0.00	.96	1.64	.20	.20	0.00	3.01	
	0.00	.16	.27	.03	.03	0.00	.50	
SE	0	11	32	36	11	0	91	5.15
	0.00	.75	2.19	2.46	.75	0.00	6.22	
	0.00	.13	.38	.41	.13	0.00	1.04	
SSE	0	9	28	34	18	1	90	5.57
	0.00	.61	1.91	2.32	1.23	.07	6.15	
	0.00	.10	.32	.39	.21	.01	1.03	
S	1	5	43	58	31	8	146	6.17
	.07	.34	2.94	3.96	2.12	.55	9.97	
	.01	.06	.49	.66	.35	.09	1.67	
SSW	1	4	33	55	30	13	85	7.37
	.07	.27	.89	1.71	2.05	.89	5.87	
	.01	.05	.15	.29	.34	.15	.98	
SW	0	6	11	34	7	1	59	5.60
	0.00	.41	.75	2.32	.48	.07	4.03	
	0.00	.07	.13	.39	.08	.01	.97	
WSW	0	7	12	5	4	0	28	4.71
	0.00	.48	.82	.34	.27	0.00	1.91	
	0.00	.08	.14	.06	.05	0.00	.32	
W	0	8	10	9	3	3	33	5.16
	0.00	.55	.68	.61	.20	.20	2.25	
	0.00	.09	.11	.10	.03	.03	.38	
WNW	0	8	18	18	13	1	57	5.66
	0.00	.48	1.23	1.23	.89	.07	3.89	
	0.00	.08	.21	.21	.15	.01	.65	
NW	0	8	28	49	46	13	144	6.79
	0.00	.55	1.91	3.35	3.14	.89	9.84	
	0.00	.09	.32	.56	.53	.15	1.64	
NNW	1	13	47	109	83	3	256	6.31
	.07	.89	3.21	7.45	5.67	.20	17.49	
	.01	.15	.54	1.24	.95	.03	2.92	
N	2	16	79	87	35	1	220	5.32
	.14	1.78	5.40	5.96	2.39	.07	15.71	
	.02	.30	.90	.99	.40	.01	2.63	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	6	201	438	488	287	44	1464	5.58
	.41	13.73	29.92	33.33	19.60	3.01	100.00	
	.07	2.29	5.00	5.57	3.28	.50	16.71	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCE: THIS CLASS
XXX PERCENT OCCURRENCE: ALL CLASSES

1

Revision 1
1/78

TABLE 5-106

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.	TOTAL	MEAN SPEED
NNE	0	6	8	7	0	0	21	4.27
	0.00	1.16	1.55	1.36	0.00	0.00	4.07	
	0.00	.07	.09	.08	0.00	0.00	.24	
NE	0	2	6	2	0	0	10	3.98
	0.00	.39	1.16	.39	0.00	0.00	1.94	
	0.00	.02	.07	.02	0.00	0.00	.11	
ENE	2	3	6	1	0	0	12	3.32
	.39	.58	1.16	.19	0.00	0.00	2.33	
	.02	.03	.07	.01	0.00	0.00	.14	
E	0	0	9	2	1	0	12	4.66
	0.00	0.00	1.74	.39	.19	0.00	2.33	
	0.00	0.00	.10	.02	.01	0.00	.14	
ESE	0	6	7	1	4	0	18	4.49
	0.00	1.16	1.36	.19	.78	0.00	3.49	
	0.00	.07	.08	.01	.05	0.00	.21	
SE	0	0	11	14	5	0	30	5.67
	0.00	0.00	2.13	2.71	.97	0.00	5.81	
	0.00	0.00	.13	.16	.06	0.00	.34	
SSE	1	10	8	26	6	4	55	5.62
	.19	1.94	1.55	5.04	1.16	.78	10.66	
	.01	.11	.09	.30	.07	.05	.63	
S	0	5	11	23	16	2	57	6.14
	0.00	.97	2.13	4.46	3.10	.39	11.05	
	0.00	.06	.13	.26	.18	.02	.65	
SSW	0	1	5	9	17	8	40	6.04
	0.00	.19	.97	1.74	3.29	1.55	7.75	
	0.00	.01	.06	.10	.19	.09	.46	
SW	0	0	6	9	7	2	24	6.91
	0.00	0.00	1.16	1.74	1.36	.39	4.65	
	0.00	0.00	.07	.10	.08	.02	.27	
WSW	1	2	1	5	2	4	15	7.08
	.19	.39	.19	.97	.39	.78	2.91	
	.01	.02	.01	.06	.02	.05	.17	
W	0	2	5	11	2	0	20	5.47
	0.00	.39	.97	2.13	.39	0.00	3.88	
	0.00	.02	.06	.13	.02	0.00	.23	
WNW	1	4	10	9	4	4	32	5.78
	.19	.78	1.94	1.74	.78	.78	6.20	
	.01	.05	.11	.10	.05	.05	.37	
NW	1	0	10	6	14	1	32	6.63
	.19	0.00	1.94	1.16	2.71	.19	6.20	
	.01	0.00	.11	.07	.16	.01	.37	
NNW	1	3	13	25	23	14	79	7.26
	.19	.58	2.52	4.84	4.45	2.71	15.31	
	.01	.03	.15	.29	.26	.16	.90	
N	0	7	23	21	8	0	59	5.17
	0.00	1.36	4.46	4.07	1.55	0.00	11.43	
	0.00	.08	.26	.24	.09	0.00	.67	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	7	51	139	171	109	39	516	6.03
	1.36	9.88	26.94	33.14	21.12	7.56	100.00	
	.08	.58	1.59	1.95	1.24	.45	5.89	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-107

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	5	10	3	2	0	20	4.41
	0.00	.85	1.69	.51	.34	0.00	3.38	
	0.00	.06	.11	.03	.02	0.00	.23	
NE	0	2	4	2	0	0	8	4.03
	0.00	.34	.68	.34	0.00	0.00	1.35	
	0.00	.02	.05	.02	0.00	0.00	.04	
ENE	0	2	7	0	0	0	9	3.69
	0.00	.34	1.18	0.00	0.00	0.00	1.52	
	0.00	.02	.08	0.00	0.00	0.00	.10	
E	0	3	10	3	0	0	16	4.09
	0.00	.51	1.69	.51	0.00	0.00	2.71	
	0.00	.03	.11	.03	0.00	0.00	.18	
ESE	0	1	12	6	1	0	20	4.98
	0.00	.17	2.03	1.02	.17	0.00	3.38	
	0.00	.01	.14	.07	.01	0.00	.23	
SE	0	3	15	13	2	0	33	5.00
	0.00	.51	2.54	2.20	.34	0.00	5.58	
	0.00	.03	.17	.15	.02	0.00	.38	
SSE	0	6	10	7	6	3	32	5.70
	0.00	1.02	1.69	1.18	1.02	.51	5.41	
	0.00	.07	.11	.08	.07	.03	.37	
S	0	3	18	40	15	1	77	6.06
	0.00	.51	3.05	6.77	2.54	.17	13.03	
	0.00	.03	.21	.46	.17	.01	.88	
SSW	0	2	8	20	10	5	45	6.80
	0.00	.34	1.35	3.38	1.69	.85	7.61	
	0.00	.02	.09	.23	.11	.06	.51	
SW	0	3	5	21	8	1	38	6.15
	0.00	.51	.85	3.55	1.35	.17	6.43	
	0.00	.03	.06	.24	.09	.01	.43	
WSW	0	3	7	2	4	2	18	5.77
	0.00	.51	1.18	.34	.68	.34	3.05	
	0.00	.03	.08	.02	.05	.02	.21	
W	0	3	7	9	1	0	20	4.74
	0.00	.51	1.18	1.52	.17	0.00	3.38	
	0.00	.03	.08	.10	.01	0.00	.23	
WNW	0	2	7	10	7	7	33	7.20
	0.00	.34	1.18	1.69	1.18	1.18	5.58	
	0.00	.02	.08	.11	.08	.08	.38	
NW	1	2	3	13	19	1	39	6.72
	.17	.34	.51	2.20	3.21	.17	6.60	
	.01	.02	.03	.15	.22	.01	.45	
NNW	1	9	19	35	32	16	112	6.83
	.17	1.52	3.21	5.92	5.41	2.71	18.95	
	.01	.10	.22	.40	.37	.18	1.28	
N	0	6	35	28	2	0	71	4.94
	0.00	1.02	5.92	4.74	.34	0.00	12.01	
	0.00	.07	.40	.32	.02	0.00	.81	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	2	55	177	212	109	36	591	5.90
	.34	9.31	29.95	35.87	18.44	6.09	100.00	
	.02	.63	2.02	2.42	1.24	.41	6.75	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-108

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	5	25	35	14	7	0	86	3.96
	.18	.92	1.28	.51	.26	0.00	3.16	
	.06	.29	.40	.16	.08	0.00	.98	
NE	4	43	41	7	1	0	96	3.32
	.15	1.58	1.50	.26	.04	0.00	3.52	
	.05	.49	.47	.08	.01	0.00	1.10	
ENE	8	45	36	5	0	0	94	3.01
	.29	1.65	1.32	.18	0.00	0.00	3.45	
	.09	.51	.41	.06	0.00	0.00	1.07	
E	3	55	82	14	0	0	154	3.52
	.11	2.02	3.01	.51	0.00	0.00	5.65	
	.03	.63	.94	.16	0.00	0.00	1.76	
ESE	2	30	72	40	5	0	149	4.32
	.07	1.10	2.64	1.47	.18	0.00	5.47	
	.02	.34	.82	.46	.06	0.00	1.70	
SE	4	53	105	77	22	0	261	4.61
	.15	1.94	3.85	2.83	.81	0.00	9.58	
	.05	.61	1.20	.88	.25	0.00	2.98	
SSE	3	38	70	73	32	12	228	5.43
	.11	1.39	2.57	2.68	1.17	.44	8.37	
	.03	.43	.80	.83	.37	.14	2.60	
S	1	62	100	114	47	4	328	5.14
	.04	2.28	3.67	4.18	1.72	.15	12.04	
	.01	.71	1.14	1.30	.54	.05	3.74	
SSW	0	22	61	56	26	12	177	5.79
	0.00	.81	2.24	2.06	.95	.44	6.50	
	0.00	.25	.70	.64	.30	.14	2.02	
SW	1	25	40	48	32	6	152	5.61
	.04	.92	1.47	1.76	1.17	.22	5.58	
	.01	.29	.46	.55	.37	.07	1.74	
WSW	3	22	22	19	13	6	85	5.23
	.11	.81	.81	.70	.48	.22	3.12	
	.03	.25	.25	.22	.15	.07	.97	
W	2	27	52	31	12	4	108	5.04
	.07	.99	1.91	1.14	.44	.15	3.96	
	.02	.31	.59	.35	.14	.05	1.23	
WNW	3	15	29	47	14	15	123	5.98
	.11	.55	1.06	1.72	.51	.55	4.51	
	.03	.17	.33	.54	.16	.17	1.40	
NW	1	32	59	66	36	7	201	5.57
	.04	1.17	2.17	2.42	1.32	.26	7.38	
	.01	.37	.67	.75	.41	.08	2.29	
NNW	2	42	79	77	29	18	251	5.51
	.07	1.54	2.90	2.83	1.07	.66	9.21	
	.02	.48	.90	.88	.33	.21	2.87	
N	3	67	106	43	5	5	229	4.15
	.11	2.46	3.89	1.58	.18	.18	8.40	
	.03	.76	1.21	.49	.06	.06	2.61	
CALM	3						3	CALM
	.11						.11	
	.03						.03	
TOTAL	48	603	969	731	285	89	2725	4.88
	1.76	22.13	35.56	26.83	10.46	3.27	100.00	
	.55	6.88	11.06	8.34	3.25	1.02	31.11	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-109

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES:METERS PER SECOND: 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	18	34	7	3	0	0	62	2.39
	.87	1.65	.34	.15	0.00	0.00	3.00	
	.21	.39	.08	.03	0.00	0.00	.71	
NE	8	39	2	2	1	0	43	2.50
	.39	1.45	.10	.10	.05	0.00	2.08	
	.09	.34	.02	.02	.01	0.00	.49	
ENE	8	32	1	0	0	0	41	2.27
	.39	1.55	.05	0.00	0.00	0.00	1.99	
	.09	.37	.01	0.00	0.00	0.00	.47	
E	7	22	18	2	0	0	49	2.81
	.34	1.07	.87	.10	0.00	0.00	2.37	
	.08	.52	.41	.02	0.00	0.00	.56	
ESE	15	57	36	9	0	0	117	2.92
	.73	2.76	1.74	.44	0.00	0.00	5.67	
	.17	.65	.41	.10	0.00	0.00	1.34	
SE	14	87	93	42	5	0	241	3.61
	.68	4.22	4.51	2.03	.24	0.00	11.68	
	.16	.99	1.06	.48	.06	0.00	2.75	
SSE	16	92	73	22	2	1	206	3.29
	.78	4.46	3.54	1.07	.10	.05	9.98	
	.18	1.05	.83	.25	.02	.01	2.35	
S	19	113	154	75	9	1	371	3.88
	.92	5.47	7.46	3.63	.44	.05	17.97	
	.22	1.29	1.76	.85	.10	.01	4.24	
SSW	5	36	68	47	5	1	162	4.28
	.24	1.74	3.29	2.28	.24	.05	7.85	
	.06	.41	.78	.54	.06	.01	1.85	
SW	3	14	36	34	5	0	92	4.63
	.15	.68	1.74	1.65	.24	0.00	4.46	
	.03	.16	.41	.39	.06	0.00	1.05	
WSW	3	17	28	8	2	0	58	4.46
	.15	.82	.78	1.36	.10	0.00	3.20	
	.03	.19	.18	.32	.02	0.00	.75	
W	4	24	44	23	5	0	111	3.40
	.73	1.16	2.13	1.11	.24	0.00	5.38	
	.17	.27	.50	.26	.06	0.00	1.27	
WNW	7	18	47	19	1	0	92	3.87
	.34	.87	2.28	.92	.05	0.00	4.46	
	.08	.21	.54	.22	.01	0.00	1.05	
NW	2	37	28	22	0	0	89	3.73
	.10	1.79	1.36	1.07	0.00	0.00	4.31	
	.02	.42	.32	.25	0.00	0.00	1.02	
NNW	10	44	30	12	3	1	113	3.21
	.87	2.37	1.45	.58	.15	.05	5.47	
	.21	.56	.34	.14	.03	.01	1.34	
N	26	106	40	4	0	0	185	2.71
	1.26	5.14	2.37	.19	0.00	0.00	8.96	
	.30	1.21	.56	.05	0.00	0.00	2.11	
CALM	24						24	CALM
	1.16						1.16	
	.27						.27	
TOTAL	208	768	702	344	38	4	2064	3.49
	10.08	37.21	34.01	16.67	1.84	.19	100.00	
	2.37	8.77	8.01	3.93	.43	.05	23.56	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-110

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976 TO JUNE,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	8 .86 .09	15 1.61 .17	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	23 2.47 .65	1.79
NE	11 1.18 .13	6 .65 .07	0 0.00 0.00	1 .11 .01	0 0.00 0.00	0 0.00 0.00	18 1.94 .21	1.79
ENE	5 .54 .05	6 .65 .07	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 1.18 .13	1.77
E	12 1.29 .14	9 .97 .10	4 .43 .05	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	25 2.69 .29	2.10
ESE	9 .97 .10	9 .97 .10	7 .75 .08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	25 2.69 .29	2.37
SE	14 1.51 .16	35 3.76 .40	15 1.61 .17	2 .22 .02	0 0.00 0.00	0 0.00 0.00	66 7.10 .75	2.47
SSE	25 2.69 .29	74 7.96 .84	9 .97 .10	1 .11 .01	0 0.00 0.00	0 0.00 0.00	109 11.72 1.24	2.21
S	19 2.04 .22	140 15.05 1.60	36 3.87 .41	1 .11 .01	0 0.00 0.00	1 .11 .01	197 21.18 2.25	2.60
SSW	4 .43 .05	38 4.09 .43	39 4.19 .45	9 .97 .10	0 0.00 0.00	0 0.00 0.00	90 9.68 1.03	3.28
SW	7 .75 .08	11 1.18 .13	12 1.29 .14	14 1.51 .16	0 0.00 0.00	0 0.00 0.00	44 4.73 .50	3.84
WSW	3 .32 .03	11 1.18 .13	6 .65 .07	9 .97 .10	0 0.00 0.00	0 0.00 0.00	29 3.12 .33	3.68
W	10 1.08 .11	17 1.83 .19	14 1.51 .16	15 1.61 .17	2 .22 .02	0 0.00 0.00	58 6.24 .66	3.60
WNW	10 1.08 .11	9 .97 .10	6 .65 .07	9 .97 .10	0 0.00 0.00	0 0.00 0.00	34 3.66 .39	3.14
NW	4 .75 .08	21 2.26 .24	4 .43 .05	2 .22 .02	0 0.00 0.00	0 0.00 0.00	34 3.66 .39	2.41
NNW	17 1.83 .19	26 2.80 .30	12 1.29 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	55 5.91 .63	2.14
N	39 4.19 .45	39 4.19 .45	6 .65 .07	1 .11 .01	0 0.00 0.00	0 0.00 0.00	85 9.14 .97	1.86
CALM	27 2.90 .31						27 2.90 .31	CALM
TOTAL	227 24.41 2.59	466 50.11 5.32	170 18.28 1.94	64 6.88 .73	2 .22 .02	1 .11 .01	930 100.00 10.62	2.54

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-111

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	15 3.19 .17	6 1.28 .07	1 .21 .01	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	22 4.68 .25	1.40
NE	13 2.77 .15	4 .85 .05	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	17 3.62 .19	1.37
ENE	9 1.91 .10	6 1.28 .07	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	15 3.19 .17	1.61
E	8 1.70 .09	5 1.06 .06	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	13 2.77 .15	1.46
ESE	14 2.98 .16	2 .43 .02	1 .21 .01	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	17 3.62 .19	1.43
SE	18 3.83 .21	19 4.04 .22	1 .21 .01	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	38 8.09 .43	1.77
SSE	29 6.17 .33	47 10.00 .54	2 .43 .02	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	78 16.60 .89	1.85
S	18 3.83 .21	29 6.17 .33	4 .85 .05	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	51 10.85 .58	1.96
SSW	9 1.91 .10	10 2.13 .11	8 1.70 .09	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	27 5.74 .31	2.26
SW	8 1.70 .09	14 2.98 .16	5 1.06 .06	5 .43 .02	0 0.00 0.00	0 0.00 0.00	29 6.17 .33	2.39
WSW	9 1.91 .10	11 2.34 .13	2 .43 .02	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	22 4.68 .25	1.99
W	10 2.13 .11	11 2.34 .13	2 .43 .02	8 1.70 .09	0 0.00 0.00	0 0.00 0.00	31 6.60 .35	2.83
WNW	5 1.06 .06	4 .85 .05	1 .21 .01	1 .21 .01	0 0.00 0.00	0 0.00 0.00	11 2.34 .13	2.24
NW	6 1.28 .07	3 .64 .03	3 .64 .03	1 .21 .01	0 0.00 0.00	0 0.00 0.00	13 2.77 .15	2.52
NNW	6 1.28 .07	2 .43 .02	1 .21 .01	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 1.91 .10	1.91
N	21 4.47 .24	21 4.47 .24	2 .43 .02	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	29 6.17 .33	1.88
CALM	30 6.38 .34	16 3.40 .18	3 .64 .03	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	50 10.64 .57	CALM
TOTAL	7 1.49 .08						7 1.49 .08	
	202 42.98 2.31	222 47.23 2.53	34 7.23 .39	12 2.55 .14	0 0.00 0.00	0 0.00 0.00	470 100.00 5.37	1.92

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-112

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY.1976 TO JUNE.1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	46 .53	121 1.38	99 1.13	42 .48	12 .14	0 0.00	320 3.65	3.37
NE	37 .42	104 1.19	72 .82	17 .19	2 .02	0 0.00	232 2.65	2.98
ENE	32 .37	116 1.32	62 .71	6 .07	0 0.00	0 0.00	216 2.47	2.75
E	30 .34	108 1.23	146 1.67	24 .27	1 .01	0 0.00	309 3.53	3.29
ESE	40 .46	119 1.36	159 1.82	59 .67	13 .15	0 0.00	390 4.45	3.64
SE	50 .57	208 2.37	273 3.12	184 2.10	45 .51	0 0.00	760 8.68	4.09
SSE	74 .84	276 3.15	200 2.28	163 1.86	64 .73	21 .24	798 9.11	4.13
S	58 .66	357 4.08	366 4.18	311 3.55	118 1.35	17 .19	1227 14.01	4.45
SSW	19 .22	113 1.29	202 2.31	166 1.89	88 1.00	39 .45	627 7.16	5.32
SW	19 .22	73 .83	115 1.31	162 1.85	59 .67	10 .11	438 5.00	5.13
WSW	19 .22	73 .83	66 .75	68 .78	25 .29	12 .14	263 3.00	4.68
W	37 .42	92 1.05	114 1.30	106 1.21	25 .29	7 .08	381 4.35	4.30
WNW	26 .30	59 .67	118 1.35	113 1.29	39 .45	27 .31	382 4.36	5.15
NW	18 .21	103 1.18	135 1.54	159 1.82	115 1.31	22 .25	552 6.30	5.47
NNW	46 .53	163 1.86	202 2.31	258 2.95	174 1.99	52 .59	895 10.22	5.45
N	88 1.00	281 3.21	300 3.42	184 2.10	50 .57	6 .07	909 10.38	3.94
CALM	61 .70						61 .70	CALM
TOTAL	700 7.99	2366 27.01	2629 30.01	2022 23.08	830 9.47	213 2.43	8760 100.00	4.40

NUMBER OF VALID OBSERVATIONS 8760 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 8760 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

1

TABLE 5-113

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 0:/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 2.44 .13	1 2.44 .13	2 4.88 .27	0 0.00 0.00	0 0.00 0.00	4 9.76 .54	4.26
NE	0 0.00 0.00	2 4.88 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	2.13
ENE	2 4.88 .27	1 2.44 .13	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 9.76 .54	2.25
E	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	3 7.32 .40	5.05
ESE	0 0.00 0.00	1 2.44 .13	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	3.08
SE	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	4.03
SSE	0 0.00 0.00	4 9.76 .54	2 4.88 .27	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	7 17.07 .94	3.11
S	0 0.00 0.00	1 2.44 .13	3 7.32 .40	2 4.88 .27	0 0.00 0.00	0 0.00 0.00	6 14.63 .81	4.23
SSW	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	2 4.88 .27	1 2.44 .13	0 0.00 0.00	4 9.76 .54	6.63
SW	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	3 7.32 .40	0 0.00 0.00	0 0.00 0.00	4 9.76 .54	5.45
WSW	1 2.44 .13	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.88 .27	2.13
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	0 0.00 0.00	0 0.00 0.00	1 2.44 .13	5.69
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	3 7.32 .40	11 26.83 1.48	14 34.15 1.88	11 26.83 1.48	2 4.88 .27	0 0.00 0.00	41 100.00 5.51	4.03

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-114

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	4	6	2	0	0	12	3.79
	0.00	1.97	2.96	.99	0.00	0.00	5.91	
	0.00	.54	.81	.27	0.00	0.00	1.61	
NE	1	5	3	0	0	0	9	2.79
	.49	2.46	1.48	0.00	0.00	0.00	4.43	
	.13	.67	.40	0.00	0.00	0.00	1.21	
ENE	0	5	1	0	0	0	6	2.61
	0.00	2.46	.49	0.00	0.00	0.00	2.96	
	0.00	.67	.13	0.00	0.00	0.00	.81	
E	0	2	1	0	0	0	3	2.53
	0.00	.99	.49	0.00	0.00	0.00	1.48	
	0.00	.27	.13	0.00	0.00	0.00	.40	
ESE	0	2	8	1	0	0	11	3.79
	0.00	.99	3.94	.49	0.00	0.00	5.42	
	0.00	.27	1.08	.13	0.00	0.00	1.48	
SE	0	3	9	3	0	0	15	4.05
	0.00	1.48	4.43	1.48	0.00	0.00	7.39	
	0.00	.40	1.21	.40	0.00	0.00	2.02	
SSE	0	2	6	2	0	0	10	4.24
	0.00	.99	2.96	.99	0.00	0.00	4.93	
	0.00	.27	.81	.27	0.00	0.00	1.34	
S	0	1	5	10	2	0	18	5.59
	0.00	.49	2.46	4.93	.99	0.00	8.87	
	0.00	.13	.67	1.34	.27	0.00	2.42	
SSW	0	2	4	7	19	0	32	6.80
	0.00	.99	1.97	3.45	9.36	0.00	15.76	
	0.00	.27	.54	.94	2.55	0.00	4.30	
SW	0	3	6	26	4	0	39	5.54
	0.00	1.48	2.96	12.81	1.97	0.00	19.21	
	0.00	.40	.81	3.49	.54	0.00	5.24	
WSW	0	3	7	1	0	0	11	3.92
	0.00	1.48	3.45	.49	0.00	0.00	5.42	
	0.00	.40	.94	.13	0.00	0.00	1.48	
W	0	2	3	0	0	0	5	3.04
	0.00	.99	1.48	0.00	0.00	0.00	2.46	
	0.00	.27	.40	0.00	0.00	0.00	.67	
WNW	0	2	0	0	0	0	2	2.13
	0.00	.99	0.00	0.00	0.00	0.00	.99	
	0.00	.27	0.00	0.00	0.00	0.00	.27	
NW	0	2	1	0	0	0	3	2.53
	0.00	.99	.49	0.00	0.00	0.00	1.48	
	0.00	.27	.13	0.00	0.00	0.00	.40	
NNW	0	2	2	0	1	0	5	4.07
	0.00	.99	.99	0.00	.49	0.00	2.46	
	0.00	.27	.27	0.00	.13	0.00	.67	
N	0	5	16	1	0	0	22	3.53
	0.00	2.46	7.88	.49	0.00	0.00	10.84	
	0.00	.67	2.15	.13	0.00	0.00	2.96	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	45	78	53	26	0	203	4.64
	.49	22.17	38.42	26.11	12.81	0.00	100.00	
	.13	6.05	10.48	7.12	3.49	0.00	27.28	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-115

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78, 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	4.27
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	3.32
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	5.21
ESE	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	4.74
SE	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	4.50
SSE	3 8.57 .40	2 5.71 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 14.29 .67	2.75
S	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	3 8.57 .40	0 0.00 0.00	0 0.00 0.00	5 14.29 .67	5.50
SSW	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	3 8.57 .40	2 5.71 .27	0 0.00 0.00	6 17.14 .81	6.72
SW	1 2.86 .13	3 8.57 .40	3 8.57 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 20.00 .94	4.47
WSW	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	4.50
W	0 0.00 0.00	1 2.86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 .13	2.37
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.71 .27	4.03
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	5 14.29 .67	16 45.71 2.15	12 34.29 1.61	2 5.71 .27	0 0.00 0.00		35 100.00 4.70	4.66

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-116

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY, 1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .56 .13	3 1.67 .40	5 2.78 .67	2 1.11 .27	0 0.00 0.00	0 0.00 0.00	11 6.11 1.48	3.36
NE	1 .56 .13	4 2.22 .54	2 1.11 .27	1 .56 .13	0 0.00 0.00	0 0.00 0.00	8 4.44 1.08	3.14
ENE	1 .56 .13	8 4.44 1.08	5 2.78 .67	1 .56 .13	0 0.00 0.00	0 0.00 0.00	15 8.33 2.02	2.94
E	0 0.00 0.00	9 5.00 1.21	7 3.89 .94	4 2.22 .54	0 0.00 0.00	0 0.00 0.00	20 11.11 2.69	3.58
ESE	0 0.00 0.00	3 1.67 .40	2 1.11 .27	1 .56 .13	0 0.00 0.00	0 0.00 0.00	6 3.33 .81	3.39
SE	0 0.00 0.00	1 .56 .13	3 1.67 .40	2 1.11 .27	0 0.00 0.00	0 0.00 0.00	6 3.33 .81	4.42
SSE	0 0.00 0.00	3 1.67 .40	4 2.22 .54	3 1.67 .40	0 0.00 0.00	0 0.00 0.00	10 5.56 1.34	3.74
S	0 0.00 0.00	2 1.11 .27	8 4.44 1.08	9 5.00 1.21	3 1.67 .40	0 0.00 0.00	22 12.22 2.96	5.32
SSW	0 0.00 0.00	1 .56 .13	14 7.78 1.88	16 8.89 2.15	0 0.00 0.00	0 0.00 0.00	31 17.22 4.17	5.21
SW	0 0.00 0.00	8 4.44 1.08	5 2.78 .67	2 1.11 .27	0 0.00 0.00	0 0.00 0.00	15 8.33 2.02	3.45
WSW	1 .56 .13	0 0.00 0.00	3 1.67 .40	2 1.11 .27	0 0.00 0.00	0 0.00 0.00	6 3.33 .81	4.03
W	0 0.00 0.00	1 .56 .13	0 0.00 0.00	1 .56 .13	0 0.00 0.00	0 0.00 0.00	2 1.11 .27	4.50
WNW	0 0.00 0.00	0 0.00 0.00	1 .56 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .56 .13	3.79
NW	0 0.00 0.00	2 1.11 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.11 .27	2.84
NNW	0 0.00 0.00	3 1.67 .40	1 .56 .13	1 .56 .13	0 0.00 0.00	0 0.00 0.00	5 2.78 .67	3.41
N	0 0.00 0.00	8 4.44 1.08	12 6.67 1.61	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	20 11.11 2.69	3.27
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	4 2.22 .54	56 31.11 7.53	72 40.00 9.68	45 25.00 6.05	3 1.67 .40	0 0.00 0.00	180 100.00 24.19	3.99

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-117

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	3 1.49 .40	6 2.97 .81	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	12 5.94 1.61	2.49
NE	2 .99 .27	6 2.97 .81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 3.96 1.08	1.96
ENE	0 0.00 0.00	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.49 .40	2.06
E	0 0.00 0.00	0 0.00 0.00	2 .99 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .99 .27	4.03
ESE	0 0.00 0.00	4 1.98 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 1.98 .54	2.61
SE	1 .50 .13	9 4.46 1.21	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 5.45 1.48	2.07
SSE	1 .50 .13	9 4.46 1.21	7 3.47 .94	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	20 9.90 2.69	3.18
S	3 1.49 .40	21 10.40 2.82	27 13.37 3.63	7 3.47 .94	0 0.00 0.00	0 0.00 0.00	58 28.71 7.80	3.46
SSW	0 0.00 0.00	6 2.97 .81	27 13.37 3.63	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	36 17.82 4.84	3.85
SW	0 0.00 0.00	3 1.49 .40	10 4.95 1.34	2 .99 .27	0 0.00 0.00	0 0.00 0.00	15 7.43 2.02	3.73
WSW	0 0.00 0.00	2 .99 .27	2 .99 .27	1 .50 .13	0 0.00 0.00	0 0.00 0.00	5 2.48 .67	3.41
W	0 0.00 0.00	2 .99 .27	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.49 .40	3.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .50 .13	2.37
NNW	3 1.49 .40	3 1.49 .40	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.47 .94	1.96
N	2 .99 .27	9 4.46 1.21	6 2.97 .81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	17 8.42 2.28	2.57
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	15 7.43 2.02	84 41.58 11.29	87 43.07 11.69	16 7.92 2.15	0 0.00 0.00	0 0.00 0.00	202 100.00 27.15	3.16

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-118

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	3 4.84 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .40	1.90
NE	1 1.61 .13	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .40	1.74
ENE	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	1.42
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	1.90
SE	0 0.00 0.00	4 6.45 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 6.45 .54	2.13
SSE	5 8.06 .67	7 11.29 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	12 19.35 1.61	1.86
S	3 4.84 .40	5 8.06 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 12.90 1.08	2.01
SSW	2 3.23 .27	2 3.23 .27	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 8.06 .67	1.99
SW	2 3.23 .27	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .40	1.58
WSW	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	2.84
W	0 0.00 0.00	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	1.90
WNW	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .13	1.42
NW	1 1.61 .13	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .40	1.74
NNW	2 3.23 .27	2 3.23 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 6.45 .54	1.54
N	8 12.90 1.08	4 6.45 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	12 19.35 1.61	1.46
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	26 41.94 3.49	35 56.45 4.70	1 1.61 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	62 100.00 8.33	1.79

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-119

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	1.90
NE	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	1.42
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	2 9.52 .27	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 14.29 .40	1.42
SSE	4 19.05 .54	2 9.52 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 28.57 .81	1.66
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	1.42
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	1 4.76 .13	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 9.52 .27	1.90
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	1 4.76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.76 .13	1.90
N	1 4.76 .13	5 23.81 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 28.57 .81	1.90
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	10 47.62 1.34	11 52.38 1.48	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	21 100.00 2.82	1.72

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-120

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JULY:1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	4 .54	18 2.42	17 2.28	6 .81	0 0.00	0 0.00	45 6.05	3.23
NE	6 .81	19 2.55	5 .67	1 .13	0 0.00	0 0.00	31 4.17	2.48
ENE	4 .54	17 2.28	8 1.08	1 .13	0 0.00	0 0.00	30 4.03	2.65
E	0 0.00	11 1.48	12 1.61	5 .67	1 .13	0 0.00	29 3.90	3.71
ESE	0 0.00	11 1.48	12 1.61	2 .27	0 0.00	0 0.00	25 3.36	3.41
SE	3 .40	18 2.42	16 2.15	6 .81	0 0.00	0 0.00	43 5.78	3.25
SSE	10 1.34	30 4.03	21 2.82	9 1.21	0 0.00	0 0.00	70 9.41	3.02
S	6 .81	30 4.03	45 6.05	31 4.17	5 .67	0 0.00	117 15.73	4.17
SSW	2 .27	11 1.48	48 6.45	31 4.17	22 2.96	0 0.00	114 15.32	5.21
SW	3 .40	16 2.15	25 3.36	36 4.84	4 .54	0 0.00	84 11.29	4.56
WSW	2 .27	7 .94	13 1.75	5 .67	0 0.00	0 0.00	27 3.63	3.72
W	0 0.00	7 .94	4 .54	2 .27	0 0.00	0 0.00	13 1.75	3.32
WNW	2 .27	3 .40	1 .13	0 0.00	0 0.00	0 0.00	6 .81	2.21
NW	1 .13	7 .94	1 .13	0 0.00	0 0.00	0 0.00	9 1.21	2.32
NNW	5 .67	11 1.48	4 .54	1 .13	1 .13	0 0.00	22 2.96	2.69
N	11 1.48	31 4.17	36 4.84	1 .13	0 0.00	0 0.00	79 10.62	2.83
CALM	0 0.00						0 0.00	CALM
TOTAL	59 7.93	247 33.20	268 36.02	137 18.41	33 4.44	0 0.00	744 100.00	3.73

NUMBER OF VALID OBSERVATIONS	744	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	744	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

1

TABLE 5-121

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	4	14	3	0	0	21	3.86
	0.00	1.72	6.01	1.29	0.00	0.00	9.01	
	0.00	.54	1.88	.40	0.00	0.00	2.82	
NE	0	5	3	0	0	0	8	2.78
	0.00	2.15	1.29	0.00	0.00	0.00	3.43	
	0.00	.67	.40	0.00	0.00	0.00	1.08	
ENE	0	6	6	0	0	0	12	3.28
	0.00	2.58	2.58	0.00	0.00	0.00	5.15	
	0.00	.81	.81	0.00	0.00	0.00	1.61	
E	0	2	6	0	0	0	8	3.61
	0.00	.86	2.58	0.00	0.00	0.00	3.43	
	0.00	.27	.81	0.00	0.00	0.00	1.08	
ESE	0	1	3	0	0	0	4	3.79
	0.00	.43	1.29	0.00	0.00	0.00	1.72	
	0.00	.13	.40	0.00	0.00	0.00	.54	
SE	0	6	7	22	2	0	37	5.18
	0.00	2.58	3.00	9.44	.86	0.00	15.88	
	0.00	.81	.94	2.98	.27	0.00	4.97	
SSE	0	3	17	14	1	0	35	4.81
	0.00	1.29	7.30	6.01	.43	0.00	15.02	
	0.00	.40	2.28	1.88	.13	0.00	4.70	
S	1	3	24	13	2	0	43	4.74
	.43	1.29	10.30	5.58	.86	0.00	18.45	
	.13	.40	3.23	1.75	.27	0.00	5.78	
SSW	1	1	5	15	0	0	22	5.45
	.43	.43	2.15	6.44	0.00	0.00	9.44	
	.13	.13	.67	2.02	0.00	0.00	2.96	
SW	0	1	1	0	0	0	2	3.08
	0.00	.43	.43	0.00	0.00	0.00	.86	
	0.00	.13	.13	0.00	0.00	0.00	.27	
WSW	0	0	1	0	0	0	1	3.32
	0.00	0.00	.43	0.00	0.00	0.00	.43	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
W	0	4	2	0	0	0	6	2.92
	0.00	1.72	.86	0.00	0.00	0.00	2.58	
	0.00	.54	.27	0.00	0.00	0.00	.81	
WNW	0	2	2	0	0	0	4	3.44
	0.00	.86	.86	0.00	0.00	0.00	1.72	
	0.00	.27	.27	0.00	0.00	0.00	.54	
NW	0	3	0	1	0	0	4	3.67
	0.00	1.29	0.00	.43	0.00	0.00	1.72	
	0.00	.40	0.00	.13	0.00	0.00	.54	
NNW	0	0	0	1	3	0	4	7.58
	0.00	0.00	0.00	.43	1.29	0.00	1.72	
	0.00	0.00	0.00	.13	.40	0.00	.54	
N	1	3	9	7	2	0	22	4.81
	.43	1.29	3.86	3.00	.86	0.00	9.44	
	.13	.40	1.21	.94	.27	0.00	2.96	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	3	44	100	76	10	0	233	4.56
	1.29	18.88	42.92	32.62	4.29	0.00	100.00	
	.40	5.91	13.44	10.22	1.34	0.00	31.32	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-122

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	1.90
NE	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	4.27
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	3 .00 0.00	0 0.00 0.00	2 8.33 .27	4 16.67 .53	0 0.00 0.00	0 0.00 0.00	6 25.00 .81	5.45
SSE	0 0.00 0.00	2 8.33 .27	2 8.33 .27	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	5 20.83 .67	4.08
S	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	3 12.50 .40	1 4.17 .13	0 0.00 0.00	5 20.83 .67	6.26
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 8.33 .27	0 0.00 0.00	0 0.00 0.00	2 8.33 .27	6.88
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.17 .13	3.32
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00	0 0.00	2 8.33 .27	1 4.17 .13	0 0.00	0 0.00	3 12.50 .40	4.27
TOTAL	0 0.00 0.00	3 12.50 .40	9 37.50 1.21	11 45.83 1.48	1 4.17 .13	0 0.00 0.00	0 0.00 24 100.00 3.23	CALM 0.00 5.12

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-123

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.57 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7A35-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	3.79
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	2.44
E	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	3.55
ESE	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	4.03
SE	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	4.74
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	2 8.00 .27	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	3 12.00 .40	4.74
SSW	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	3 12.00 .40	0 0.00 0.00	0 0.00 0.00	4 16.00 .54	5.21
SW	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 4.00 .13	4.27
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	1 4.00 .13	1 4.00 .13	1 4.00 .13	0 0.00 0.00	0 0.00 0.00	3 12.00 .40	3.64
CALM	0 1.00 0.00	0 0.00	4 16.00 .54	2 8.00 .27	0 0.00 0.00	0 0.00 0.00	6 24.00 .81	4.74 CALM
TOTAL	0 0.00 0.00	3 12.00 .40	14 56.00 1.88	8 32.00 1.08	0 0.00 0.00	0 0.00 0.00	25 100.00 3.36	4.40

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-124

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 1.72 .27	1 .86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.59 .40	2.44
NE	0 0.00 0.00	7 6.03 .94	2 1.72 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 7.76 1.21	2.58
ENE	0 0.00 0.00	4 3.45 .54	3 2.59 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 6.03 .94	2.78
E	0 0.00 0.00	6 5.17 .81	5 4.31 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 9.48 1.48	3.10
ESE	0 0.00 0.00	2 1.72 .27	3 2.59 .40	1 .86 .13	0 0.00 0.00	0 0.00 0.00	6 5.17 .81	3.55
SE	0 0.00 0.00	4 3.45 .54	14 12.07 1.88	8 6.90 1.08	1 .86 .13	0 0.00 0.00	27 23.28 3.63	4.55
SSE	0 0.00 0.00	3 2.59 .40	3 2.59 .40	1 .86 .13	1 .86 .13	0 0.00 0.00	8 6.90 1.08	4.28
S	0 0.00 0.00	6 5.17 .81	5 4.31 .67	3 2.59 .40	1 .86 .13	1 .86 .13	16 12.93 2.02	4.17
SSW	0 0.00 0.00	1 .86 .13	1 .86 .13	3 2.59 .40	0 0.00 0.00	0 0.00 0.00	5 4.31 .67	4.64
SW	0 0.00 0.00	2 1.72 .27	0 0.00 0.00	2 1.72 .27	0 0.00 0.00	0 0.00 0.00	4 3.45 .54	4.26
WSW	0 0.00 0.00	2 1.72 .27	0 0.00 0.00	0 0.00 0.00	1 .86 .13	0 0.00 0.00	3 2.59 .40	4.42
W	1 .86 .13	1 .86 .13	1 .86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.59 .40	2.84
WNW	1 .86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .86 .13	.95
NW	0 0.00 0.00	1 .86 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .86 .13	2.37
NNW	0 0.00 0.00	1 .86 .13	2 1.72 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.59 .40	3.16
N	0 0.00 0.00	2 1.72 .27	6 5.17 .81	2 1.72 .27	0 0.00 0.00	0 0.00 0.00	10 8.62 1.34	4.22
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 1.72 .27	44 37.93 5.91	46 39.66 6.18	20 17.24 2.69	3 2.59 .40	1 .86 .13	116 100.00 15.59	3.82

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-125

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .50 .13	8 3.96 1.08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 4.46 1.21	2.26
NE	3 1.49 .40	6 2.97 .81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 4.46 1.21	2.16
ENE	0 0.00 0.00	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.49 .40	2.37
E	1 .50 .13	4 1.98 .54	2 .99 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.47 .94	2.57
ESE	0 0.00 0.00	8 3.96 1.08	7 3.47 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	15 7.43 2.02	3.19
SE	1 .50 .13	15 7.43 2.02	16 7.92 2.15	4 1.98 .54	0 0.00 0.00	0 0.00 0.00	36 17.82 4.84	3.63
SSE	1 .50 .13	14 6.93 1.88	11 5.45 1.48	1 .50 .13	0 0.00 0.00	0 0.00 0.00	27 13.37 3.63	3.14
S	0 0.00 0.00	16 7.92 2.15	13 6.44 1.75	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	32 15.84 4.30	3.26
SSW	1 .50 .13	7 3.47 .94	9 4.46 1.21	8 3.96 1.08	0 0.00 0.00	0 0.00 0.00	25 12.38 3.36	4.04
SW	1 .50 .13	1 .50 .13	2 .99 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 1.98 .54	3.08
WSW	0 0.00 0.00	3 1.49 .40	0 0.00 0.00	1 .40 .13	0 0.00 0.00	0 0.00 0.00	4 1.96 .54	3.08
W	3 1.49 .40	2 .99 .27	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 2.97 .81	2.13
WNW	0 0.00 0.00	2 .99 .27	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.49 .40	2.53
NW	1 .50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .50 .13	1.90
NNW	2 .99 .27	3 1.49 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.48 .67	1.80
N	5 2.48 .67	9 4.46 1.21	1 .50 .13	1 .50 .13	0 0.00 0.00	0 0.00 0.00	16 7.92 2.15	2.28
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	19 9.41 2.56	102 50.50 13.71	63 31.19 8.47	18 8.91 2.42	0 0.00 0.00	0 0.00 0.00	202 100.00 27.15	3.08

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-126

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 1.00 .13	2 2.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 3.00 .40	1.74
NE	1 1.00 .13	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.00 .27	1.90
ENE	0 0.00 0.00	2 2.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.00 .27	2.13
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	2.37
SE	1 1.00 .13	9 9.00 1.21	5 5.00 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	15 15.00 2.02	2.65
SSE	2 2.00 .27	13 13.00 1.75	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	16 16.00 2.15	2.28
S	3 3.00 .40	26 26.00 3.49	5 5.00 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	34 34.00 4.57	2.45
SSW	0 0.00 0.00	7 7.00 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 7.00 .94	2.44
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	1 1.00 .13	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.00 .27	1.66
W	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.00 .13	3.79
WNW	1 1.00 .13	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.00 .27	1.69
NW	1 1.00 .13	3 3.00 .40	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 5.00 .67	2.18
NNW	2 2.00 .27	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 3.00 .40	1.[illegible]
N	6 6.00 .81	1 1.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 7.00 .94	1.49
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	19 19.00 2.55	68 68.00 9.14	13 13.00 1.75	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	100 100.00 13.44	2.29

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-127

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 2.27 .13	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.82 .40	1.74
NE	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	2.37
ENE	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	1.90
E	1 2.27 .13	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.55 .27	1.66
ESE	2 4.55 .27	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.82 .40	1.42
SE	1 2.27 .13	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.55 .27	2.84
SSE	1 2.27 .13	3 6.82 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 9.09 .54	1.90
S	3 6.82 .40	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 11.36 .67	1.61
SSW	0 0.00 0.00	3 6.82 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.82 .40	2.21
SW	0 0.00 0.00	3 6.82 .40	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 9.09 .54	2.37
WSW	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	1.90
W	2 4.55 .27	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 9.09 .54	1.54
WNW	0 0.00 0.00	1 2.27 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.27 .13	2.37
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.55 .27	1.90
N	0 0.00 0.00	8 18.18 1.08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 18.18 1.08	1.96
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	11 25.00 1.48	31 70.45 4.17	2 4.55 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	44 100.00 5.91	1.92

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-128

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: AUGUST,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	3 .40	19 2.55	16 2.15	3 .40	0 0.00	0 0.00	41 5.51	3.08
NE	4 .54	20 2.69	6 .81	0 0.00	0 0.00	0 0.00	30 4.03	2.51
ENE	0 0.00	17 2.28	9 1.21	0 0.00	0 0.00	0 0.00	26 3.49	2.88
E	2 .27	13 1.75	15 2.02	0 0.00	0 0.00	0 0.00	30 4.03	3.05
ESE	2 .27	13 1.75	15 2.02	1 .13	0 0.00	0 0.00	31 4.17	3.19
SE	3 .40	34 4.57	46 6.18	39 5.24	3 .40	0 0.00	125 16.80	4.25
SSE	4 .54	38 5.11	34 4.57	17 2.28	2 .27	0 0.00	95 12.77	3.70
S	7 .94	53 7.12	50 6.72	23 3.09	3 .40	1 .13	137 18.41	3.70
SSW	2 .27	20 2.69	15 2.02	31 4.17	0 0.00	0 0.00	68 9.14	4.45
SW	1 .13	7 .94	5 .67	2 .27	0 0.00	0 0.00	15 2.02	3.29
WSW	1 .13	7 .94	1 .13	1 .13	1 .13	0 0.00	11 1.48	3.10
W	6 .81	9 1.21	5 .67	0 0.00	0 0.00	0 0.00	20 2.69	2.44
WNW	2 .27	6 .81	4 .54	0 0.00	0 0.00	0 0.00	12 1.61	2.65
NW	1 .13	8 1.08	1 .13	1 .13	0 0.00	0 0.00	11 1.48	2.72
NNW	4 .54	8 1.08	3 .40	2 .27	3 .40	0 0.00	20 2.69	3.39
N	12 1.61	23 3.09	22 2.96	13 1.75	2 .27	0 0.00	72 9.68	3.50
CALM	0 0.00						0 0.00	CALM
TOTAL	54 7.26	295 39.65	247 33.20	133 17.88	14 1.88	1 .13	744 100.00	3.59

NUMBER OF VALID OBSERVATIONS	744	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	744	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-129

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	6	4	1	0	0	11	3.49
	0.00	2.67	1.78	.44	0.00	0.00	4.89	
	0.00	.83	.56	.14	0.00	0.00	1.53	
NE	0	3	9	3	0	0	15	4.20
	0.00	1.33	4.00	1.33	0.00	0.00	6.67	
	0.00	.42	1.25	.42	0.00	0.00	2.08	
ENE	0	5	4	0	0	0	9	3.11
	0.00	2.22	1.78	0.00	0.00	0.00	4.00	
	0.00	.69	.56	0.00	0.00	0.00	1.25	
E	0	5	15	1	0	0	21	3.84
	0.00	2.22	6.67	.44	0.00	0.00	9.33	
	0.00	.69	2.08	.14	0.00	0.00	2.92	
ESE	0	8	10	0	1	0	19	3.44
	0.00	3.56	4.44	0.00	.44	0.00	8.44	
	0.00	1.11	1.39	0.00	.14	0.00	2.64	
SE	0	0	8	6	5	0	19	5.84
	0.00	0.00	3.56	2.67	2.22	0.00	8.44	
	0.00	0.00	1.11	.83	.69	0.00	2.64	
SSE	0	2	3	6	8	0	19	6.31
	0.00	.89	1.33	2.67	3.56	0.00	8.44	
	0.00	.28	.42	.83	1.11	0.00	2.64	
S	0	0	13	13	7	0	33	5.89
	0.00	0.00	5.78	5.78	3.11	0.00	14.67	
	0.00	0.00	1.81	1.81	.97	0.00	4.58	
SSW	0	1	3	1	0	0	5	4.36
	0.00	.44	1.33	.44	0.00	0.00	2.22	
	0.00	.14	.42	.14	0.00	0.00	.69	
SW	0	0	0	8	0	0	8	6.40
	0.00	0.00	0.00	3.56	0.00	0.00	3.56	
	0.00	0.00	0.00	1.11	0.00	0.00	1.11	
WSW	0	1	0	1	1	0	3	5.69
	0.00	.44	0.00	.44	.44	0.00	1.33	
	0.00	.14	0.00	.14	.14	0.00	.42	
W	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WNW	0	0	1	1	0	0	2	4.26
	0.00	0.00	.44	.44	0.00	0.00	.89	
	0.00	0.00	.14	.14	0.00	0.00	.28	
NW	0	0	6	2	0	0	8	4.56
	0.00	0.00	2.67	.89	0.00	0.00	3.56	
	0.00	0.00	.83	.28	0.00	0.00	1.11	
NNW	0	6	10	17	1	0	34	4.88
	0.00	2.67	4.44	7.56	.44	0.00	15.11	
	0.00	.83	1.39	2.36	.14	0.00	4.72	
N	1	2	9	7	0	0	19	4.77
	.44	.89	4.00	3.11	0.00	0.00	8.44	
	.14	.28	1.25	.97	0.00	0.00	2.64	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	39	95	67	23	0	225	4.85
	.44	17.33	42.22	29.78	10.22	0.00	100.00	
	.14	5.42	13.19	9.31	3.19	0.00	31.25	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-130

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	3 16.67 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 16.67 .42	4.27
ESE	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	2.37
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	1 5.56 .14	7.58
SSE	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	3.79
S	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	3 16.67 .42	0 0.00 0.00	0 0.00 0.00	4 22.22 .56	5.81
SSW	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	3.32
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	6.16
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	2.84
WNW	0 0.00 0.00	2 11.11 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 11.11 .28	2.13
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 .00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.56 .14	0 0.00 0.00	1 5.56 .14	9.48
N	0 0.00 0.00	2 11.11 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 11.11 .28	2.37
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	6 33.33 .83	6 33.33 .83	4 22.22 .56	2 11.11 .28	0 0.00 0.00	18 100.00 2.50	4.48

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-131

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	4.50
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	1 6.67 .14	0 0.00 0.00	3 20.00 .42	6.64
SSW	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	3.55
SW	0 0.00 0.00	2 13.33 .28	0 0.00 0.00	3 20.00 .42	0 0.00 0.00	0 0.00 0.00	5 33.33 .69	4.74
WSW	0 0.00 0.00	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 6.67 .14	2.84
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	1 6.67 .14	1 6.67 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 13.33 .28	2.84
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	4 26.67 .56	5 33.33 .69	5 33.33 .69	1 6.67 .14	0 0.00 0.00	15 100.00 2.08	4.55

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-132

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	4	1	0	0	5	4.64
	0.00	0.00	3.70	.93	0.00	0.00	4.63	
	0.00	0.00	.56	.14	0.00	0.00	.69	
NE	0	7	1	0	0	0	8	2.66
	0.00	6.48	.93	0.00	0.00	0.00	7.41	
	0.00	.97	.14	0.00	0.00	0.00	1.11	
ENE	0	7	3	0	0	0	10	2.70
	0.00	6.48	2.78	0.00	0.00	0.00	9.26	
	0.00	.97	.42	0.00	0.00	0.00	1.39	
E	0	4	3	0	0	0	7	3.18
	0.00	3.70	2.78	0.00	0.00	0.00	6.48	
	0.00	.56	.42	0.00	0.00	0.00	.97	
ESE	0	2	1	0	0	0	3	2.84
	0.00	1.85	.93	0.00	0.00	0.00	2.78	
	0.00	.28	.14	0.00	0.00	0.00	.42	
SE	0	2	1	3	1	0	7	5.21
	0.00	1.85	.93	2.78	.93	0.00	6.48	
	0.00	.28	.14	.42	.14	0.00	.97	
SSE	0	2	3	4	0	0	9	4.43
	0.00	1.85	2.78	3.70	0.00	0.00	8.33	
	0.00	.28	.42	.56	0.00	0.00	1.25	
S	0	3	2	6	0	0	11	4.70
	0.00	2.78	1.85	5.56	0.00	0.00	10.19	
	0.00	.42	.28	.83	0.00	0.00	1.53	
SSW	0	2	0	0	0	0	2	2.13
	0.00	1.85	0.00	0.00	0.00	0.00	1.85	
	0.00	.28	0.00	0.00	0.00	0.00	.28	
SW	0	2	2	3	0	0	7	4.13
	0.00	1.85	1.85	2.78	0.00	0.00	6.48	
	0.00	.28	.28	.42	0.00	0.00	.97	
WSW	0	1	1	0	0	0	2	3.08
	0.00	.93	.93	0.00	0.00	0.00	1.85	
	0.00	.14	.14	0.00	0.00	0.00	.28	
W	0	0	1	0	0	0	1	3.32
	0.00	0.00	.93	0.00	0.00	0.00	.93	
	0.00	0.00	.14	0.00	0.00	0.00	.14	
WNW	0	1	0	0	0	0	1	2.84
	0.00	.93	0.00	0.00	0.00	0.00	.93	
	0.00	.14	0.00	0.00	0.00	0.00	.14	
NW	0	4	4	2	0	0	10	3.79
	0.00	3.70	3.70	1.85	0.00	0.00	9.26	
	0.00	.56	.56	.28	0.00	0.00	1.39	
NNW	0	3	4	9	0	0	16	4.77
	0.00	2.78	3.70	8.33	0.00	0.00	14.81	
	0.00	.42	.56	1.25	0.00	0.00	2.22	
N	0	4	5	2	1	0	9	3.99
	0.00	3.70	1.85	1.85	.93	0.00	8.33	
	0.00	.56	.28	.28	.14	0.00	1.25	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	44	32	30	2	0	108	3.94
	0.00	40.74	29.63	27.78	1.85	0.00	100.00	
	0.00	6.11	4.44	4.17	.28	0.00	15.00	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-133

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER.1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	10 6.06 1.39	2 1.21 .28	1 .61 .14	0 0.00 0.00	0 0.00 0.00	13 7.88 1.81	2.84
NE	0 0.00 0.00	9 5.45 1.25	1 .61 .14	1 .61 .14	0 0.00 0.00	0 0.00 0.00	11 6.67 1.53	2.80
ENE	1 .61 .14	8 4.85 1.11	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 5.45 1.25	2.47
E	1 .61 .14	3 1.82 .42	4 2.42 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 4.85 1.11	2.67
ESE	1 .61 .14	7 4.24 .97	6 3.64 .83	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	14 8.48 1.94	2.94
SE	1 .61 .14	8 4.85 1.11	10 6.06 1.39	6 3.64 .83	0 0.00 0.00	0 0.00 0.00	25 15.15 3.47	3.66
SSE	0 0.00 0.00	8 4.85 1.11	10 6.06 1.39	4 2.42 .56	1 .61 .14	0 0.00 0.00	23 13.94 3.19	3.75
S	0 0.00 0.00	1 .61 .14	12 7.27 1.67	1 .61 .14	0 0.00 0.00	0 0.00 0.00	14 8.48 1.94	3.89
SSW	0 0.00 0.00	1 .61 .14	4 2.42 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 3.03 .69	3.41
SW	0 0.00 0.00	1 .61 .14	0 0.00 0.00	1 .61 .14	0 0.00 0.00	0 0.00 0.00	2 1.21 .28	4.03
WSW	0 0.00 0.00	0 0.00 0.00	1 .61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .61 .14	3.32
W	1 .61 .14	2 1.21 .28	1 .61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.42 .56	2.60
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	3 1.82 .42	1 .61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.42 .56	3.08
NNW	2 1.21 .28	3 1.82 .42	5 3.03 .69	5 3.03 .69	0 0.00 0.00	0 0.00 0.00	15 9.09 2.08	4.20
N	1 .61 .14	6 3.64 .83	9 5.45 1.25	1 .61 .14	0 0.00 0.00	0 0.00 0.00	17 10.30 2.36	3.40
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	8 4.85 1.11	70 42.42 9.72	66 40.00 9.17	20 12.12 2.78	1 .61 .14	0 0.00 0.00	165 100.00 22.92	3.38

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-134

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .79 .14	4 3.15 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 3.94 .69	2.27
NE	0 0.00 0.00	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.57 .28	1.90
ENE	0 0.00 0.00	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.36 .42	2.37
E	1 .79 .14	5 3.94 .69	4 3.15 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	10 7.87 1.39	3.03
ESE	2 1.57 .28	2 1.57 .28	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 5.51 .97	2.71
SE	1 .79 .14	6 4.72 .83	3 2.36 .42	1 .79 .14	0 0.00 0.00	0 0.00 0.00	11 8.66 1.53	2.80
SSE	6 4.72 .83	13 10.24 1.81	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	21 16.54 2.92	2.05
S	3 2.36 .42	16 12.60 2.22	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	22 17.32 3.06	2.48
SSW	0 0.00 0.00	5 3.94 .69	3 2.36 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 6.30 1.11	2.84
SW	0 0.00 0.00	4 3.15 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.15 .56	2.25
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	2 1.57 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.57 .28	2.13
WNW	1 .79 .14	0 0.00 0.00	1 .79 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.57 .28	2.37
NW	0 0.00 0.00	7 5.51 .97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 5.51 .97	2.30
NNW	2 1.57 .28	2 1.57 .28	7 5.51 .97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 8.66 1.53	2.93
N	1 .79 .14	7 5.51 .97	4 3.15 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	12 9.45 1.67	2.53
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	18 14.17 2.50	78 61.42 10.83	30 23.62 4.17	1 .79 .14	0 0.00 0.00	0 0.00 0.00	127 100.00 17.64	2.52

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-135

NT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	6 9.68 .83	0 0.00 0.00	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 11.29 .97	1.29
NE	1 1.61 .14	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	1.90
ENE	1 1.61 .14	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	1.89
E	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	.95
ESE	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	.95
SE	2 3.23 .28	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 6.45 .56	1.89
SSE	2 3.23 .28	7 11.29 .97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 14.52 1.25	1.79
S	3 4.84 .42	2 3.23 .28	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 9.68 .83	1.82
SSW	1 1.61 .14	1 1.61 .14	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 8.06 .69	2.75
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.23 .28	1.90
W	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.61 .14	.95
WNW	3 4.84 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	1.26
NW	2 3.23 .28	1 1.61 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.84 .42	1.58
NNW	1 1.61 .14	4 6.45 .56	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 11.29 .97	2.44
N	5 8.06 .69	1 1.61 .14	2 3.23 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 12.90 1.11	2.19
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	30 48.39 4.17	23 37.10 3.19	9 14.52 1.25	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	62 100.00 8.61	1.88

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-136

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: SEPTEMBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	7 .97	20 2.78	11 1.53	3 .42	0 0.00	0 0.00	41 5.69	2.90
NE	1 .14	23 3.19	11 1.53	4 .56	0 0.00	0 0.00	39 5.42	3.20
ENE	2 .28	24 3.33	7 .97	0 0.00	0 0.00	0 0.00	33 4.58	2.67
E	3 .42	17 2.36	31 4.31	1 .14	0 0.00	0 0.00	52 7.22	3.41
ESE	4 .56	20 2.78	20 2.78	0 0.00	1 .14	0 0.00	45 6.25	3.05
SE	4 .56	18 2.50	22 3.06	16 2.22	7 .97	0 0.00	67 9.31	4.25
SSE	8 1.11	32 4.44	19 2.64	14 1.94	9 1.25	0 0.00	82 11.39	3.77
S	6 .83	22 3.06	32 4.44	25 3.47	8 1.11	0 0.00	93 12.92	4.40
SSW	1 .14	10 1.39	16 2.22	1 .14	0 0.00	0 0.00	28 3.89	3.22
SW	0 0.00	9 1.25	2 .28	16 2.22	0 0.00	0 0.00	27 3.75	4.71
WSW	0 0.00	5 .69	2 .28	1 .14	1 .14	0 0.00	9 1.25	3.69
W	2 .28	5 .69	2 .28	0 0.00	0 0.00	0 0.00	9 1.25	2.42
WNW	4 .56	3 .42	2 .28	1 .14	0 0.00	0 0.00	10 1.39	2.42
NW	2 .28	15 2.08	11 1.53	4 .56	0 0.00	0 0.00	32 4.44	3.36
NNW	5 .69	19 2.64	29 4.03	31 4.31	2 .28	0 0.00	86 11.94	4.30
N	8 1.11	22 3.06	26 3.61	10 1.39	1 .14	0 0.00	67 9.31	3.54
CALM	0 0.00						0 0.00	CALM
TOTAL	57 7.92	264 36.67	243 33.75	127 17.64	29 4.03	0 0.00	720 100.00	3.69

NUMBER OF VALID OBSERVATIONS	720	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	720	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

1

Revision 1
1/78

TABLE 5-137

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	3.79
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	3.79
NNW	0 0.00 0.00	0 0.00 0.00	1 1.52 .13	1 1.52 .13	0 0.00 0.00	0 0.00 0.00	2 3.03 .27	5.22
N	1 1.52 .13	3 4.55 .40	10 15.15 1.34	21 31.82 2.82	8 12.12 1.08	0 0.00 0.00	43 65.15 5.78	5.53
CALM	0 0.00 0.00	0 0.00	4 6.06 .54	15 22.73 2.02	0 0.00 0.00	0 0.00 0.00	19 28.79 2.55	5.52
TOTAL	0 0.00 0.00 1 1.52 .13	3 4.55 .40	17 25.76 2.28	37 56.06 4.97	8 12.12 1.08	0 0.00 0.00	0 0.00 0.00 66 100.00 8.87	CALM 5.46

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-138

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	1	0	0	0	2	3.32
	0.00	3.13	3.13	0.00	0.00	0.00	6.25	
	0.00	.13	.13	0.00	0.00	0.00	.27	
NE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	0	1	0	1	0	2	6.16
	0.00	0.00	3.13	0.00	3.13	0.00	6.25	
	0.00	0.00	.13	0.00	.13	0.00	.27	
SSE	0	1	2	1	0	0	4	4.03
	0.00	3.13	6.25	3.13	0.00	0.00	12.50	
	0.00	.13	.27	.13	0.00	0.00	.54	
S	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSW	0	0	1	0	0	0	1	3.32
	0.00	0.00	3.13	0.00	0.00	0.00	3.13	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
SW	0	0	0	4	0	1	5	7.68
	0.00	0.00	0.00	12.50	0.00	3.13	15.63	
	0.00	0.00	0.00	.54	0.00	.13	.67	
WSW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
W	0	1	0	0	0	0	1	2.84
	0.00	3.13	0.00	0.00	0.00	0.00	3.13	
	0.00	.13	0.00	0.00	0.00	0.00	.13	
WNW	1	0	0	0	0	0	1	.42
	3.13	0.00	0.00	0.00	0.00	0.00	3.13	
	.13	0.00	0.00	0.00	0.00	0.00	.13	
NW	1	0	0	0	0	0	1	.85
	3.13	0.00	0.00	0.00	0.00	0.00	3.13	
	.13	0.00	0.00	0.00	0.00	0.00	.13	
NNW	1	2	3	5	1	0	12	4.76
	3.13	6.25	9.38	15.63	3.13	0.00	37.50	
	.13	.27	.40	.67	.13	0.00	1.61	
N	0	1	1	1	0	0	3	3.79
	0.00	3.13	3.13	3.13	0.00	0.00	9.38	
	0.00	.13	.13	.13	0.00	0.00	.40	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	3	6	9	11	2	1	32	4.67
	9.38	18.75	28.13	34.38	6.25	3.13	100.00	
	.40	.81	1.21	1.48	.27	.13	4.30	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-139

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 1.85 .13	2 3.70 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.56 .40	3.32
NE	0 0.00 0.00	1 1.85 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.85 .13	2.84
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	1 1.85 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.85 .13	1.90
ESE	0 0.00 0.00	1 1.85 .13	1 1.85 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.70 .27	3.32
SE	0 0.00 0.00	1 1.85 .13	2 3.70 .27	2 3.70 .27	0 0.00 0.00	0 0.00 0.00	5 9.26 .67	4.36
SSE	0 0.00 0.00	3 5.56 .40	1 1.85 .13	2 3.70 .27	0 0.00 0.00	0 0.00 0.00	6 11.11 .81	3.95
S	0 0.00 0.00	1 1.85 .13	0 0.00 0.00	1 1.85 .13	1 1.85 .13	0 0.00 0.00	3 5.56 .40	6.16
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.56 .40	0 0.00 0.00	0 0.00 0.00	3 5.56 .40	5.84
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.85 .13	3 5.56 .40	0 0.00 0.00	4 7.41 .54	7.82
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.85 .13	0 0.00 0.00	1 1.85 .13	9.01
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	1 1.85 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.85 .13	1.42
NNW	1 1.85 .13	1 1.85 .13	5 9.26 .67	4 7.41 .54	1 1.85 .13	0 0.00 0.00	12 22.22 1.61	5.05
N	0 0.00 0.00	2 3.70 .27	7 12.96 .94	3 5.56 .40	0 0.00 0.00	0 0.00 0.00	12 22.22 1.61	4.24
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	2 3.70 .27	12 22.22 1.61	18 33.33 2.42	16 29.63 2.15	6 11.11 .81	0 0.00 0.00	54 100.00 7.26	4.74

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-140

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2	5	9	1	0	0	17	3.21
	.72	1.79	3.23	.36	0.00	0.00	6.09	
	.27	.67	1.21	.13	0.00	0.00	2.28	
NE	2	7	6	0	0	0	15	2.89
	.72	2.51	2.15	0.00	0.00	0.00	5.38	
	.27	.94	.81	0.00	0.00	0.00	2.02	
ENE	2	4	4	0	0	0	10	2.85
	.72	1.43	1.43	0.00	0.00	0.00	3.58	
	.27	.54	.54	0.00	0.00	0.00	1.34	
E	0	6	1	0	0	0	7	2.37
	0.00	2.15	.36	0.00	0.00	0.00	2.51	
	0.00	.81	.13	0.00	0.00	0.00	.94	
ESE	0	3	13	1	0	0	17	3.65
	0.00	1.08	4.66	.36	0.00	0.00	6.09	
	0.00	.40	1.75	.13	0.00	0.00	2.28	
SE	0	3	14	6	2	0	25	4.72
	0.00	1.08	5.02	2.15	.72	0.00	8.96	
	0.00	.40	1.88	.81	.27	0.00	3.36	
SSE	1	6	8	3	2	0	20	3.91
	.36	2.15	2.87	1.08	.72	0.00	7.17	
	.13	.81	1.08	.40	.27	0.00	2.69	
S	0	8	6	3	1	0	18	3.74
	0.00	2.87	2.15	1.08	.36	0.00	6.45	
	0.00	1.08	.81	.40	.13	0.00	2.42	
SSW	0	1	4	7	1	0	13	5.29
	0.00	.36	1.43	2.51	.36	0.00	4.66	
	0.00	.13	.54	.94	.13	0.00	1.75	
SW	0	2	0	8	5	0	15	6.48
	0.00	.72	0.00	2.87	1.79	0.00	5.38	
	0.00	.27	0.00	1.08	.67	0.00	2.02	
WSW	0	1	0	1	2	0	4	6.04
	0.00	.36	0.00	.36	.72	0.00	1.43	
	0.00	.13	0.00	.13	.27	0.00	.54	
W	0	3	3	0	0	0	6	2.84
	0.00	1.08	1.08	0.00	0.00	0.00	2.15	
	0.00	.40	.40	0.00	0.00	0.00	.81	
WNW	0	1	1	3	0	0	5	4.84
	0.00	.36	.36	1.08	0.00	0.00	1.79	
	0.00	.13	.13	.40	0.00	0.00	.67	
NW	0	5	9	8	0	0	19	4.65
	0.00	.72	3.23	2.87	0.00	0.00	6.81	
	0.00	.27	1.21	1.08	0.00	0.00	2.55	
NNW	2	9	17	11	1	0	40	4.02
	.72	3.23	6.09	3.94	.36	0.00	14.34	
	.27	1.21	2.28	1.48	.13	0.00	5.38	
N	1	10	34	3	0	0	48	3.61
	.36	3.58	12.19	1.08	0.00	0.00	17.20	
	.13	1.34	4.57	.40	0.00	0.00	6.45	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	10	71	129	55	14	0	279	4.02
	3.58	25.45	46.24	19.71	5.02	0.00	100.00	
	1.34	9.54	17.34	7.39	1.88	0.00	37.50	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-141

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .76 .13	1.42
NE	0 0.00 0.00	2 1.52 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.52 .27	1.88
ENE	3 2.27 .40	6 4.55 .81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 6.82 1.21	1.80
E	0 0.00 0.00	3 2.27 .40	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	4 3.03 .54	3.08
ESE	1 .76 .13	2 1.52 .27	1 .76 .13	1 .76 .13	0 0.00 0.00	0 0.00 0.00	5 3.79 .67	3.03
SE	1 .76 .13	4 3.03 .54	5 3.79 .67	3 2.27 .40	0 0.00 0.00	0 0.00 0.00	13 9.85 1.75	3.83
SSE	1 .76 .13	0 0.00 0.00	6 4.55 .81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 5.30 .94	3.25
S	0 0.00 0.00	6 4.55 .81	16 12.12 2.15	4 3.03 .54	0 0.00 0.00	0 0.00 0.00	26 19.70 3.49	3.74
SSW	0 0.00 0.00	0 0.00 0.00	1 .76 .13	1 .76 .13	0 0.00 0.00	0 0.00 0.00	2 1.52 .27	4.98
SW	0 0.00 0.00	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .76 .13	3.79
WSW	0 0.00 0.00	1 .76 .13	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	2 1.52 .27	4.26
W	0 0.00 0.00	2 1.52 .27	1 .76 .13	1 .76 .13	0 0.00 0.00	0 0.00 0.00	4 3.03 .54	3.67
WNW	0 0.00 0.00	1 .76 .13	2 1.52 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.27 .40	2.85
NW	0 0.00 0.00	5 3.79 .67	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	6 4.55 .81	3.24
NNW	5 1.55 .27	5 3.79 .67	12 9.09 1.61	2 1.52 .27	0 0.00 0.00	0 0.00 0.00	21 15.91 2.82	3.30
N	2 1.52 .27	17 12.88 2.28	6 4.55 .81	1 .76 .13	0 0.00 0.00	0 0.00 0.00	26 19.70 3.49	2.73
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	11 8.33 1.48	54 40.91 7.26	51 38.64 6.85	16 12.12 2.15	0 0.00 0.00	0 0.00 0.00	132 100.00 17.74	3.21

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-142

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTWICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 1.41 .13	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.82 .27	1.42
NE	2 2.82 .27	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.23 .40	1.74
ENE	2 2.82 .27	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.23 .40	1.58
E	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.82 .27	1.42
ESE	2 2.82 .27	0 0.00 0.00	3 4.23 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 7.04 .67	2.94
SE	3 4.23 .40	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 7.04 .67	1.61
SSE	1 1.41 .13	5 7.04 .67	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 11.27 1.08	2.55
S	0 0.00 0.00	9 12.68 1.21	5 7.04 .67	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	15 21.13 2.02	2.41
SSW	0 0.00 0.00	2 2.82 .27	3 4.23 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 7.04 .67	3.22
SW	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	2 2.82 .27	4.03
WSW	0 0.00 0.00	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	2.64
W	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	1.42
WNW	1 1.41 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .13	1.42
NW	2 2.82 .27	1 1.41 .13	0 0.00 0.00	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	5 7.04 .67	3.22
NNW	1 1.41 .13	4 5.63 .54	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 9.86 .94	2.30
N	1 1.41 .13	2 2.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.23 .40	1.74
CALM	3 4.23 .40						3 4.23 .40	CALM
TOTAL	22 30.99 2.96	30 42.25 4.03	15 21.13 2.02	4 5.63 .54	0 0.00 0.00	0 0.00 0.00	71 100.00 9.54	2.39

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-143

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTWICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	4 3.64 .54	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 4.55 .67	1.14
NE	8 7.27 1.08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 7.27 1.08	.95
ENE	3 2.73 .40	3 2.73 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 5.45 .81	1.66
E	3 2.73 .40	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.64 .54	1.42
ESE	4 3.64 .54	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 4.55 .67	1.71
SE	5 4.55 .67	9 8.18 1.21	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	14 12.73 1.88	1.76
SSE	9 8.18 1.21	7 6.36 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	16 14.55 2.15	1.54
S	5 4.55 .67	3 2.73 .40	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 8.18 1.21	1.79
SSW	2 1.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	.95
SW	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	2.84
WSW	1 .91 .13	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	1.66
W	2 1.82 .27	2 1.82 .27	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 4.55 .67	2.28
WNW	0 0.00 0.00	1 .91 .13	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	3.08
NW	2 1.82 .27	0 0.00 0.00	3 2.73 .40	1 .91 .13	0 0.00 0.00	0 0.00 0.00	6 5.45 .81	3.63
NNW	5 4.55 .67	3 2.73 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 7.27 1.08	1.48
N	6 5.45 .81	9 8.18 1.21	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	15 13.64 2.02	1.71
CALM	2 1.82 .27						2 1.82 .27	CALM
TOTAL	61 55.45 8.20	41 37.27 5.51	7 6.36 .94	1 .91 .13	0 0.00 0.00	0 0.00 0.00	110 100.00 14.78	1.71

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-144

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: OCTOBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	8 1.08	9 1.21	13 1.75	1 .13	0 0.00	0 0.00	31 4.17	2.74
NE	12 1.61	11 1.48	6 .81	0 0.00	0 0.00	0 0.00	29 3.90	2.17
ENE	10 1.34	14 1.88	4 .54	0 0.00	0 0.00	0 0.00	28 3.76	2.12
E	5 .67	11 1.48	1 .13	1 .13	0 0.00	0 0.00	18 2.42	2.19
ESE	7 .94	6 .81	19 2.55	2 .27	0 0.00	0 0.00	34 4.57	3.15
SE	9 1.21	19 2.55	22 2.96	11 1.48	3 .40	0 0.00	64 8.60	3.67
SSE	12 1.61	22 2.96	19 2.55	6 .81	2 .27	0 0.00	61 8.20	3.05
S	5 .67	27 3.63	28 3.76	9 1.21	2 .27	0 0.00	71 9.54	3.42
SSW	2 .27	3 .40	9 1.21	11 1.48	1 .13	0 0.00	26 3.49	4.52
SW	0 0.00	4 .54	1 .13	14 1.88	8 1.08	1 .13	28 3.76	6.48
WSW	1 .13	4 .54	0 0.00	2 .27	3 .40	0 0.00	10 1.34	4.79
W	3 .40	8 1.08	5 .67	1 .13	0 0.00	0 0.00	17 2.28	2.79
WNW	2 .27	3 .40	5 .67	3 .40	0 0.00	0 0.00	13 1.75	3.42
NW	6 .81	8 1.08	13 1.75	13 1.75	0 0.00	0 0.00	40 5.38	3.96
NNW	13 1.75	27 3.63	49 6.59	43 5.78	11 1.48	0 0.00	143 19.22	4.29
N	10 1.34	41 5.51	52 6.99	23 3.09	0 0.00	0 0.00	126 16.94	3.51
CALM	5 .67						5 .67	CALM
TOTAL	110 14.78	217 29.17	246 33.06	140 18.82	30 4.03	1 .13	744 100.00	3.59

NUMBER OF VALID OBSERVATIONS	744	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	744	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-145

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	2 2.90 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.90 .28	4.26
WNW	0 0.00 0.00	0 0.00 0.00	5 7.25 .69	2 2.90 .28	3 4.35 .42	0 0.00 0.00	10 14.49 1.39	5.92
NW	0 0.00 0.00	2 2.90 .28	4 5.80 .56	6 8.70 .83	6 8.70 .83	0 0.00 0.00	18 26.09 2.50	6.27
NNW	0 0.00 0.00	0 0.00 0.00	4 5.80 .56	10 14.49 1.39	8 11.59 1.11	0 0.00 0.00	22 31.88 3.06	6.66
N	0 0.00 0.00	0 0.00 0.00	4 5.80 .56	9 13.04 1.25	4 5.80 .56	0 0.00 0.00	17 24.64 2.36	6.08
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	2 2.90 .28	19 27.54 2.64	27 39.13 3.75	21 30.43 2.92	0 0.00 0.00	69 100.00 9.58	6.24

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-146

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOH NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 2.56 .14	1 2.56 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.13 .28	3.79
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	6.64
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 7.69 .42	0 0.00 0.00	3 7.69 .42	8.21
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 7.69 .42	0 0.00 0.00	0 0.00 0.00	3 7.69 .42	6.00
WNW	0 0.00 0.00	0 0.00 0.00	4 10.26 .55	2 5.13 .28	2 5.13 .28	0 0.00 0.00	8 20.51 1.11	5.81
NW	0 0.00 0.00	0 0.00 0.00	1 2.56 .14	1 2.56 .14	5 12.82 .69	1 2.56 .14	8 20.51 1.11	7.94
NNW	0 0.00 0.00	0 0.00 0.00	3 7.69 .42	1 2.56 .14	1 2.56 .14	0 0.00 0.00	5 12.82 .69	5.50
N	0 0.00 0.00	0 0.00 0.00	4 10.26 .56	3 7.69 .42	2 5.13 .28	0 0.00 0.00	9 23.08 1.25	5.58
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	1 2.56 .14	13 33.33 1.81	11 28.21 1.53	13 33.33 1.81	1 2.56 .14	39 100.00 5.42	6.27

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-147

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	0	1	2	0	3	7.90
	0.00	0.00	0.00	2.13	4.26	0.00	6.38	
	0.00	0.00	0.00	.14	.28	0.00	.42	
NE	0	1	0	0	0	0	1	2.37
	0.00	2.13	0.00	0.00	0.00	0.00	2.13	
	0.00	.14	0.00	0.00	0.00	0.00	.14	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ESE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SSE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S	0	0	0	3	1	0	4	6.87
	0.00	0.00	0.00	6.38	2.13	0.00	8.51	
	0.00	0.00	0.00	.42	.14	0.00	.56	
SSW	0	0	0	1	5	2	9	9.01
	0.00	0.00	0.00	2.13	12.77	4.26	19.15	
	0.00	0.00	0.00	.14	.83	.28	1.25	
SW	0	0	0	1	0	1	2	8.29
	0.00	0.00	0.00	2.13	0.00	2.13	4.26	
	0.00	0.00	0.00	.14	0.00	.14	.28	
WSW	0	1	1	0	0	0	2	2.84
	0.00	2.13	2.13	0.00	0.00	0.00	4.26	
	0.00	.14	.14	0.00	0.00	0.00	.28	
W	0	0	2	4	0	0	6	5.29
	0.00	0.00	4.26	8.51	0.00	0.00	12.77	
	0.00	0.00	.28	.56	0.00	0.00	.83	
WNW	0	0	1	0	0	0	1	3.32
	0.00	0.00	2.13	0.00	0.00	0.00	2.13	
	0.00	0.00	.14	0.00	0.00	0.00	.14	
NW	0	0	0	0	1	0	1	9.48
	0.00	0.00	0.00	0.00	2.13	0.00	2.13	
	0.00	0.00	0.00	0.00	.14	0.00	.14	
NNW	0	0	1	0	3	3	7	9.07
	0.00	0.00	2.13	0.00	6.38	6.38	14.89	
	0.00	0.00	.14	0.00	.42	.42	.97	
N	0	1	3	6	1	0	11	5.56
	0.00	2.13	6.38	12.77	2.13	0.00	23.40	
	0.00	.14	.42	.83	.14	0.00	1.53	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	3	8	16	14	6	47	6.94
	0.00	6.38	17.02	34.04	29.79	12.77	100.00	
	0.00	.42	1.11	2.22	1.94	.83	6.53	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-148

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	3 1.30 .42	1 .43 .14	0 0.00 0.00	6 2.61 .83	0 0.00 0.00	10 4.35 1.39	5.73
NE	0 0.00 0.00	4 1.74 .56	2 .87 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 2.61 .83	2.84
ENE	0 0.00 0.00	2 .87 .28	1 .43 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.30 .42	2.69
E	0 0.00 0.00	2 .87 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .87 .28	2.13
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	2 .87 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .87 .28	2.13
S	0 0.00 0.00	6 2.61 .83	3 1.30 .42	10 4.35 1.39	2 .87 .28	0 0.00 0.00	21 9.13 2.92	4.78
SSW	0 0.00 0.00	1 .43 .14	6 2.61 .83	4 1.74 .56	4 1.74 .56	1 .43 .14	16 6.96 2.22	6.22
SW	0 0.00 0.00	2 .87 .28	5 2.17 .69	9 3.91 1.25	3 1.30 .42	0 0.00 0.00	19 8.26 2.64	5.54
WSW	1 .43 .14	2 .87 .28	2 .87 .28	1 .43 .14	3 1.30 .42	0 0.00 0.00	9 3.91 1.25	5.37
W	0 0.00 0.00	3 1.30 .42	5 2.17 .69	1 .43 .14	0 0.00 0.00	0 0.00 0.00	9 3.91 1.25	3.84
WNW	0 0.00 0.00	1 .43 .14	7 3.04 .97	11 4.78 1.53	0 0.00 0.00	0 0.00 0.00	19 8.26 2.64	5.01
NW	0 0.00 0.00	3 1.30 .42	7 3.04 .97	13 5.65 1.81	1 .43 .14	0 0.00 0.00	24 10.43 3.33	5.15
NNW	0 0.00 0.00	3 1.30 .42	21 9.13 2.92	19 8.26 2.64	9 3.91 1.25	4 1.74 .56	56 24.35 7.75	6.05
N	0 0.00 0.00	7 3.04 .97	16 6.96 2.22	7 3.04 .97	1 .43 .14	3 1.30 .42	34 14.78 4.72	4.98
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	1 .43 .14	41 17.83 5.69	76 33.04 10.56	75 32.61 10.42	29 12.61 4.03	8 3.48 1.11	230 100.00 31.94	5.24

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-149

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	2 1.06 .28	3 1.59 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.65 .69	1.80
SE	0 0.00 0.00	4 2.12 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.12 .56	1.90
SSE	2 1.06 .28	9 4.76 1.25	2 1.06 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	13 6.88 1.81	2.41
S	1 .53 .14	7 3.70 .97	12 6.35 1.67	2 1.06 .28	0 0.00 0.00	0 0.00 0.00	22 11.64 3.06	3.53
SSW	1 .53 .14	7 3.70 .97	5 2.65 .69	4 2.12 .56	0 0.00 0.00	0 0.00 0.00	17 8.99 2.36	3.49
SW	0 0.00 0.00	3 1.59 .42	4 2.12 .56	7 3.70 .97	2 1.06 .28	0 0.00 0.00	16 8.47 2.22	4.98
WSW	2 1.06 .28	4 2.12 .56	4 2.12 .56	8 4.23 1.11	0 0.00 0.00	0 0.00 0.00	18 9.52 2.50	4.42
W	0 0.00 0.00	3 1.59 .42	12 6.35 1.67	4 2.12 .56	0 0.00 0.00	0 0.00 0.00	19 10.05 2.64	3.97
WNW	3 1.59 .42	2 1.06 .28	17 8.99 2.36	6 3.17 .83	0 0.00 0.00	0 0.00 0.00	28 14.81 3.89	4.01
NW	0 0.00 0.00	3 1.59 .42	10 5.29 1.39	5 2.65 .69	0 0.00 0.00	0 0.00 0.00	18 9.52 2.50	4.16
NNW	1 .53 .14	8 4.23 1.11	3 1.59 .42	4 2.12 .56	0 0.00 0.00	0 0.00 0.00	16 8.47 2.22	3.61
N	1 .53 .14	7 3.70 .97	5 2.65 .69	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	13 6.88 1.81	3.21
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	13 6.88 1.81	60 31.75 8.33	74 39.15 10.28	40 21.16 5.56	2 1.06 .28	0 0.00 0.00	189 100.00 26.25	3.74

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-150

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/. . 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .88 .14	2.37
NE	3 2.65 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.65 .42	1.11
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	3 2.65 .42	2 1.77 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 4.42 .69	1.61
ESE	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .88 .14	.95
SE	1 .88 .14	2 1.77 .28	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.54 .56	2.25
SSE	1 .88 .14	7 6.19 .97	3 2.65 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 9.73 1.53	2.63
S	2 1.77 .28	18 15.93 2.50	7 6.19 .97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	27 23.89 3.75	2.65
SSW	0 0.00 0.00	8 7.08 1.11	11 9.73 1.53	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	19 16.81 2.64	3.27
SW	0 0.00 0.00	0 0.00 0.00	4 3.54 .56	6 5.31 .83	0 0.00 0.00	0 0.00 0.00	10 8.85 1.39	5.36
WSW	0 0.00 0.00	2 1.77 .28	0 0.00 0.00	2 1.77 .28	0 0.00 0.00	0 0.00 0.00	4 3.54 .56	3.55
W	3 2.65 .42	4 3.54 .56	1 .88 .14	1 .88 .14	0 0.00 0.00	0 0.00 0.00	9 7.96 1.25	2.16
WNW	1 .88 .14	1 .88 .14	0 0.00 0.00	5 4.42 .69	0 0.00 0.00	0 0.00 0.00	7 6.19 .97	4.33
NW	1 .88 .14	1 .88 .14	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.65 .42	2.53
NNW	2 1.77 .28	2 1.77 .28	1 .88 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 4.42 .69	2.09
N	3 2.65 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.65 .42	1.42
CALM	1 .88 .14						1 .88 .14	CALM
TOTAL	22 19.47 3.06	48 42.48 6.67	29 25.66 4.03	14 12.39 1.94	0 0.00 0.00	0 0.00 0.00	113 100.00 15.69	2.89

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-151

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	1.90
E	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	1.90
ESE	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	1.90
SE	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	1.90
SSE	5 15.15 .69	6 18.18 .83	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 33.33 1.53	1.90
S	0 0.00 0.00	2 6.06 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.06 .28	2.37
SSW	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	3.79
SW	0 0.00 0.00	1 3.03 .14	3 9.09 .42	2 6.06 .28	0 0.00 0.00	0 0.00 0.00	6 18.18 .83	4.34
WSW	0 0.00 0.00	2 6.06 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.06 .28	2.13
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 9.09 .42	0 0.00 0.00	0 0.00 0.00	3 9.09 .42	5.37
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	1 3.03 .14	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.06 .28	1.66
NNW	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	1.90
N	0 0.00 0.00	1 3.03 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.03 .14	1.90
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	6 18.18 .83	18 54.55 2.50	4 12.12 .56	5 15.15 .69	0 0.00 0.00	0 0.00 0.00	33 100.00 4.58	2.74

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-152

JOINT WIND FREQUENCY DISTRIBUTI N BY STABILITY CLASS
DATA PERIOD: NOVEMBER,1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00	5 .69	2 .28	1 .14	8 1.11	0 0.00	16 2.22	5.69
NE	3 .42	5 .69	2 .28	0 0.00	0 0.00	0 0.00	10 1.39	2.27
ENE	0 0.00	3 .42	1 .14	0 0.00	0 0.00	0 0.00	4 .56	2.49
E	3 .42	5 .69	0 0.00	0 0.00	0 0.00	0 0.00	8 1.11	1.78
ESE	3 .42	4 .56	0 0.00	0 0.00	0 0.00	0 0.00	7 .97	1.69
SE	1 .14	7 .97	1 .14	0 0.00	0 0.00	0 0.00	9 1.25	2.06
SSE	8 1.11	24 3.33	5 .69	0 0.00	0 0.00	0 0.00	37 5.14	2.31
S	3 .42	33 4.58	22 3.06	16 2.22	3 .42	0 0.00	77 10.69	3.75
SSW	1 .14	16 2.22	23 3.19	9 1.25	13 1.81	3 .42	65 9.03	5.08
SW	0 0.00	6 .83	16 2.22	25 3.47	5 .69	1 .14	53 7.36	5.30
WSW	3 .42	11 1.53	7 .97	11 1.53	3 .42	0 0.00	35 4.86	4.35
W	3 .42	10 1.39	22 3.06	16 2.22	0 0.00	0 0.00	51 7.08	4.00
WNW	4 .56	4 .56	34 4.72	26 3.61	5 .69	0 0.00	73 10.14	4.75
NW	2 .28	10 1.39	23 3.19	25 3.47	13 1.81	1 .14	74 10.28	5.34
NNW	3 .42	14 1.94	33 4.58	34 4.72	21 2.92	7 .97	112 15.56	5.77
N	4 .56	16 2.22	32 4.44	25 3.47	8 1.11	3 .42	88 12.22	4.91
CALM	1 .14						1 .14	CALM
TOTAL	42 5.83	173 24.03	223 30.97	188 26.11	79 10.97	15 2.08	720 100.00	4.63

NUMBER OF VALID OBSERVATIONS 720 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 720 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-153

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 5.56 .54	1 1.39 .13	0 0.00 0.00	5 6.94 .67	6.45
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	3 4.17 .40	1 1.39 .13	5 6.94 .67	8.72
NNW	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	5 6.94 .67	7 9.72 .94	3 4.17 .40	17 23.61 2.28	7.67
N	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	7 9.72 .94	20 27.78 2.69	0 0.00 0.00	29 40.28 3.90	7.58
CALM	0 0.00 0.00	2 2.78 .27	3 4.17 .40	4 5.56 .54	7 9.72 .94	0 0.00 0.00	16 22.22 2.15	6.40
TOTAL	0 0.00 0.00	2 2.78 .27	7 9.72 .94	21 29.17 2.82	38 52.78 5.11	4 5.56 .54	0 0.00 72 100.00 9.68	CALM 7.34

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-154

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .13	0 0.00 0.00	1 2.00 .13	7.58
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.00 .40	0 0.00 0.00	0 0.00 0.00	3 6.00 .40	6.00
NW	0 0.00 0.00	0 0.00 0.00	1 2.00 .13	2 4.00 .27	1 2.00 .13	0 0.00 0.00	4 8.00 .54	5.92
NNW	0 0.00 0.00	0 0.00 0.00	4 8.00 .54	1 2.00 .13	0 0.00 0.00	0 0.00 0.00	5 10.00 .67	5.03
N	0 0.00 0.00	0 0.00 0.00	3 6.00 .40	8 16.00 1.08	11 22.00 1.48	5 10.00 .67	27 54.00 3.63	7.87
CALM	0 0.00 0.00	1 2.00 .13	6 12.00 .81	1 2.00 .13	2 4.00 .27	0 0.00 0.00	10 20.00 1.34	4.98
TOTAL	0 0.00 0.00	1 2.00 .13	14 28.00 1.88	15 30.00 2.02	15 30.00 2.02	5 10.00 .67	50 100.00 6.72	0 CALM 0.00 6.73

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-155

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	3.79
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.75 .13	4.74
SSW	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	7 12.28 .94	2 3.51 .27	0 0.00 0.00	11 19.30 1.48	6.12
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	5.92
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	1 1.75 .13	6.16
W	0 0.00 0.00	1 1.75 .13	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	3.08
WNW	0 0.00 0.00	1 1.75 .13	2 3.51 .27	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	4 7.02 .54	4.26
NW	0 0.00 0.00	0 0.00 0.00	2 3.51 .27	2 3.51 .27	1 1.75 .13	0 0.00 0.00	5 8.77 .67	5.50
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.26 .40	3 5.26 .40	0 0.00 0.00	6 10.53 .81	7.11
N	0 0.00 0.00	0 0.00 0.00	3 5.26 .40	6 10.53 .81	5 8.77 .67	6 10.53 .81	20 35.09 2.69	7.68
CALM	0 0.00 0.00	0 0.00	2 3.51 .27	1 1.75 .13	0 0.00 0.00	0 0.00 0.00	3 5.26 .40	4.42
TOTAL	0 0.00 0.00	2 3.51 .27	15 26.32 2.02	23 40.35 3.09	11 19.30 1.48	6 10.53 .81	0 0.00 0.00 57 100.00 7.66	CALM 6.28

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-156

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .44 .13	2 .87 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.31 .40	2.05
NE	0 0.00 0.00	4 1.75 .54	1 .44 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.18 .67	2.84
ENE	1 .44 .13	2 .87 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.31 .40	1.90
E	1 .44 .13	3 1.31 .40	3 1.31 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.06 .94	2.78
ESE	0 0.00 0.00	1 .44 .13	2 .87 .27	3 1.31 .40	0 0.00 0.00	0 0.00 0.00	6 2.62 .81	5.14
SE	0 0.00 0.00	7 3.06 .94	7 3.06 .94	4 1.75 .54	0 0.00 0.00	0 0.00 0.00	18 7.86 2.42	4.03
SSE	1 .44 .13	6 2.62 .81	8 3.49 1.08	1 .44 .13	0 0.00 0.00	0 0.00 0.00	16 6.99 2.15	3.58
S	0 0.00 0.00	6 2.62 .81	15 6.55 2.02	11 4.80 1.48	4 1.75 .54	0 0.00 0.00	36 15.72 4.84	4.83
SSW	0 0.00 0.00	1 .44 .13	2 .87 .27	2 .87 .27	1 .44 .13	0 0.00 0.00	6 2.62 .81	5.37
SW	1 .44 .13	1 .44 .13	1 .44 .13	3 1.31 .40	0 0.00 0.00	0 0.00 0.00	6 2.62 .81	4.42
WSW	0 0.00 0.00	3 1.31 .40	4 1.75 .54	4 1.75 .54	0 0.00 0.00	0 0.00 0.00	11 4.80 1.48	4.14
W	0 0.00 0.00	0 0.00 0.00	4 1.75 .54	5 2.18 .67	1 .44 .13	0 0.00 0.00	10 4.37 1.34	5.36
WNW	1 .44 .13	2 .87 .27	4 1.75 .54	2 .87 .27	0 0.00 0.00	0 0.00 0.00	9 3.93 1.21	3.74
NW	1 .44 .13	4 1.75 .54	13 5.68 1.75	8 3.49 1.08	2 .87 .27	0 0.00 0.00	28 12.23 3.76	4.69
NNW	0 0.00 0.00	6 2.62 .81	9 3.93 1.21	13 5.68 1.75	15 6.55 2.02	7 3.06 .94	50 21.83 6.72	6.66
N	1 .44 .13	9 3.93 1.21	5 2.18 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	15 6.55 2.02	3.13
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	8 3.49 1.08	57 24.89 7.66	78 34.06 10.48	56 24.45 7.53	23 10.04 3.09	7 3.06 .94	229 100.00 30.78	4.73

KEY XX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-157

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .54 .13	3 1.61 .40	1 .54 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.69 .67	2.47
NE	3 1.61 .40	0 0.00 0.00	1 .54 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.15 .54	1.89
ENE	0 0.00 0.00	1 .54 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .54 .13	2.84
E	2 1.08 .27	1 .54 .13	1 .54 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.15 .54	1.90
ESE	1 .54 .13	3 1.61 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.15 .54	2.13
SE	0 0.00 0.00	6 3.23 .81	1 .54 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.76 .94	2.37
SSE	1 .54 .13	6 3.23 .81	7 3.76 .94	1 .54 .13	0 0.00 0.00	0 0.00 0.00	15 8.06 2.02	3.51
S	2 1.08 .27	12 6.45 1.61	10 5.38 1.34	18 9.68 2.42	2 1.08 .27	0 0.00 0.00	44 23.66 5.91	4.50
SSW	2 1.08 .27	2 1.08 .27	5 2.69 .67	8 4.30 1.08	2 1.08 .27	0 0.00 0.00	19 10.22 2.55	4.79
SW	0 0.00 0.00	1 .54 .13	3 1.61 .40	5 2.69 .67	1 .54 .13	0 0.00 0.00	10 5.38 1.34	5.07
WSW	0 0.00 0.00	0 0.00 0.00	3 1.61 .40	1 .54 .13	0 0.00 0.00	0 0.00 0.00	4 2.15 .54	4.74
W	4 2.15 .54	5 2.69 .67	5 2.69 .67	8 4.30 1.08	1 .54 .13	0 0.00 0.00	23 12.37 3.09	3.91
WNW	0 0.00 0.00	5 2.69 .67	4 2.15 .54	2 1.08 .27	0 0.00 0.00	0 0.00 0.00	11 5.91 1.48	3.58
NW	0 0.00 0.00	6 3.23 .81	9 4.84 1.21	3 1.61 .40	0 0.00 0.00	0 0.00 0.00	18 9.68 2.42	3.79
NNW	2 1.08 .27	3 1.61 .40	5 2.69 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	10 5.38 1.34	2.89
N	2 1.08 .27	3 1.61 .40	2 1.08 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.76 .94	2.57
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	20 10.75 2.69	57 30.65 7.66	57 30.65 7.66	46 24.73 6.18	6 3.23 .81	0 0.00 0.00	186 100.00 25.00	3.82

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-158

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .91 .13	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	1.42
NE	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	.95
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	.95
ESE	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .91 .13	1.90
SE	1 .91 .13	2 1.82 .27	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.64 .54	2.49
SSE	0 0.00 0.00	7 6.36 .94	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 7.27 1.08	2.72
S	3 2.73 .40	17 15.45 2.28	7 6.36 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	27 24.55 3.63	2.74
SSW	1 .91 .13	4 3.64 .54	9 8.18 1.21	5 4.55 .67	0 0.00 0.00	0 0.00 0.00	19 17.27 2.55	3.92
SW	3 2.73 .40	1 .91 .13	4 3.64 .54	2 1.82 .27	0 0.00 0.00	0 0.00 0.00	10 9.09 1.34	3.52
WSW	1 .91 .13	1 .91 .13	3 2.73 .40	5 4.55 .67	0 0.00 0.00	0 0.00 0.00	10 9.09 1.34	4.69
W	1 .91 .13	5 4.55 .67	3 2.73 .40	5 4.55 .67	1 .91 .13	0 0.00 0.00	15 13.64 2.02	4.11
WNW	2 1.82 .27	1 .91 .13	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.64 .54	2.25
NW	0 0.00 0.00	2 1.82 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	2.13
NNW	0 0.00 0.00	1 .91 .13	1 .91 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.82 .27	2.84
N	1 .91 .13	2 1.82 .27	0 0.00 0.00	1 .91 .13	0 0.00 0.00	0 0.00 0.00	4 3.64 .54	2.72
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	16 14.55 2.15	45 40.91 6.05	30 27.27 4.03	18 16.36 2.42	1 .91 .13	0 0.00 0.00	110 100.00 14.78	3.28

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-159

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER,1976

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	.95
NE	2 5.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.00 .27	1.42
ENE	3 7.50 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 7.50 .40	1.42
E	0 0.00 0.00	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	1.90
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	2 5.00 .27	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 7.50 .40	1.58
SSE	6 15.00 .81	5 12.50 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 27.50 1.48	1.77
S	3 7.50 .40	4 10.00 .54	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 20.00 1.08	2.13
SSW	0 0.00 0.00	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	2.64
SW	1 2.50 .13	2 5.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 7.50 .40	1.84
WSW	1 2.50 .13	1 2.50 .13	2 5.00 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 10.00 .54	3.32
W	0 0.00 0.00	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	1.90
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	5.21
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.50 .13	1.90
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	19 47.50 2.55	17 42.50 2.28	3 7.50 .40	1 2.50 .13	0 0.00 0.00	0 0.00 0.00	40 100.00 5.38	2.05

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-160

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: DECEMBER 1976

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	4 .54	6 .81	3 .40	0 0.00	0 0.00	0 0.00	13 1.75	2.30
NE	6 .81	4 .54	2 .27	0 0.00	0 0.00	0 0.00	12 1.61	2.13
ENE	4 .54	3 .40	0 0.00	0 0.00	0 0.00	0 0.00	7 .94	1.83
E	4 .54	5 .67	4 .54	0 0.00	0 0.00	0 0.00	13 1.75	2.30
ESE	1 .13	5 .67	2 .27	3 .40	0 0.00	0 0.00	11 1.48	3.75
SE	3 .40	16 2.15	9 1.21	4 .54	0 0.00	0 0.00	32 4.30	3.24
SSE	8 1.08	24 3.23	17 2.28	2 .27	0 0.00	0 0.00	51 6.85	3.06
S	8 1.08	39 5.24	35 4.70	36 4.84	9 1.21	0 0.00	127 17.07	4.24
SSW	3 .40	8 1.08	16 2.15	17 2.28	3 .40	0 0.00	47 6.32	4.52
SW	5 .67	5 .67	8 1.08	11 1.48	1 .13	0 0.00	30 4.03	4.14
WSW	2 .27	6 .81	13 1.75	10 1.34	0 0.00	0 0.00	31 4.17	4.22
W	5 .67	12 1.61	14 1.88	26 3.49	4 .54	0 0.00	61 8.20	4.50
WNW	3 .40	8 1.08	12 1.61	10 1.34	5 .67	1 .13	39 5.24	4.67
NW	1 .13	12 1.61	28 3.76	20 2.69	12 1.61	3 .40	76 10.22	5.29
NNW	2 .27	11 1.48	23 3.09	34 4.57	51 6.85	18 2.42	139 18.68	6.87
N	4 .54	17 2.28	18 2.42	7 .94	9 1.21	0 0.00	55 7.39	4.39
CALM	0 0.00						0 0.00	CALM
TOTAL	63 8.47	181 24.33	204 27.42	180 24.19	94 12.63	22 2.96	744 100.00	4.65

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-161

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 .88 .13	2 1.75 .27	0 0.00 0.00	0 0.00 0.00	3 2.63 .40	5.37
WNW	0 0.00 0.00	0 0.00 0.00	1 .88 .13	6 5.26 .81	3 2.63 .40	0 0.00 0.00	10 8.77 1.34	6.54
NW	0 0.00 0.00	0 0.00 0.00	11 9.65 1.48	10 8.77 1.34	14 12.28 1.88	1 .88 .13	36 31.58 4.84	6.58
NNW	0 0.00 0.00	0 0.00 0.00	7 6.14 .94	14 12.28 1.88	7 6.14 .94	1 .88 .13	29 25.44 3.90	6.46
N	0 0.00 0.00	1 .88 .13	4 3.51 .54	20 17.54 2.69	11 9.65 1.48	0 0.00 0.00	36 31.58 4.84	6.52
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	1 .88 .13	24 21.05 3.23	52 45.61 6.99	35 30.70 4.70	2 1.75 .27	114 100.00 15.32	6.49

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-162

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78, 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	5 5.13 .27	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	0 0.00 0.00	3 7.69 .40	3.16
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 7.69 .40	0 0.00 0.00	0 0.00 0.00	3 7.69 .40	5.69
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	4.27
WNW	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.56 .13	4.27
NW	0 0.00 0.00	0 0.00 0.00	4 10.26 .54	1 2.56 .13	4 10.26 .54	0 0.00 0.00	9 23.08 1.21	5.84
NNW	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	1 2.56 .13	4 10.26 .54	6 15.38 .81	12 30.77 1.61	9.68
N	0 0.00 0.00	1 2.56 .13	0 0.00 0.00	8 20.51 1.08	1 2.56 .13	0 0.00 0.00	10 25.64 1.34	6.21
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	4 10.26 .54	6 15.38 .81	14 35.90 1.88	9 23.08 1.21	6 15.38 .81	39 100.00 5.24	6.82

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

TABLE 5-163

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	5.69
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	1.90
E	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	2.84
ESE	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	3.80
SE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	4.98
SSE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	4.74
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	6.16
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	5.69
WSW	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	4.03
W	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	4.27
WNW	1 1.92 .13	3 5.77 .40	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 9.62 .67	4.74
NW	1 1.92 .13	2 3.85 .27	3 5.77 .40	5 9.62 .67	0 0.00 0.00	0 0.00 0.00	11 21.15 1.48	6.29
NNW	1 1.92 .13	1 1.92 .13	6 11.54 .81	9 17.31 1.21	1 1.92 .13	0 0.00 0.00	18 34.62 2.42	7.48
N	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	2.84
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	7 13.46 .94	14 26.92 1.88	16 30.77 2.15	14 26.92 1.88	1 1.92 .13	52 100.00 6.99	5.85

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-164

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	3	1	3	0	0	7	3.93
	0.00	1.00	.33	1.00	0.00	0.00	2.33	
	0.00	.40	.13	.40	0.00	0.00	.94	
NE	0	0	2	1	0	0	3	4.74
	0.00	0.00	.67	.33	0.00	0.00	1.00	
	0.00	0.00	.27	.13	0.00	0.00	.40	
ENE	1	2	4	1	0	0	8	3.73
	.33	.67	1.33	.33	0.00	0.00	2.67	
	.13	.27	.54	.13	0.00	0.00	1.08	
E	0	7	8	0	0	0	15	3.17
	0.00	2.33	2.67	0.00	0.00	0.00	5.00	
	0.00	.94	1.08	0.00	0.00	0.00	2.02	
ESE	2	4	1	0	0	0	7	2.17
	.67	1.33	.33	0.00	0.00	0.00	2.33	
	.27	.54	.13	0.00	0.00	0.00	.94	
SE	1	7	6	5	2	0	21	4.11
	.33	2.33	2.00	1.67	.67	0.00	7.00	
	.13	.94	.81	.67	.27	0.00	2.82	
SSE	0	4	5	10	0	0	19	4.61
	0.00	1.33	1.67	3.33	0.00	0.00	6.33	
	0.00	.54	.67	1.34	0.00	0.00	2.55	
S	0	9	19	10	2	0	40	4.43
	0.00	3.00	6.33	3.33	.67	0.00	13.33	
	0.00	1.21	2.55	1.34	.27	0.00	5.38	
SSW	0	4	8	4	0	0	16	4.38
	0.00	1.33	2.67	1.33	0.00	0.00	5.33	
	0.00	.54	1.08	.54	0.00	0.00	2.15	
SW	0	4	9	3	2	0	18	4.50
	0.00	1.33	3.00	1.00	.67	0.00	6.00	
	0.00	.54	1.21	.40	.27	0.00	2.42	
WSW	1	7	5	3	0	0	16	3.52
	.33	2.33	1.67	1.00	0.00	0.00	5.33	
	.13	.94	.67	.40	0.00	0.00	2.15	
W	1	12	4	0	0	0	17	2.68
	.33	4.00	1.33	0.00	0.00	0.00	5.67	
	.13	1.61	.54	0.00	0.00	0.00	2.28	
WNW	1	5	6	10	1	0	23	4.55
	.33	1.67	2.00	3.33	.33	0.00	7.67	
	.13	.67	.81	1.34	.13	0.00	3.09	
NW	0	6	8	19	11	0	44	5.82
	0.00	2.00	2.67	6.33	3.67	0.00	14.67	
	0.00	.81	1.08	2.55	1.48	0.00	5.91	
NNW	0	4	3	12	2	0	21	5.60
	0.00	1.33	1.00	4.00	.67	0.00	7.00	
	0.00	.54	.40	1.61	.27	0.00	2.82	
N	0	3	5	14	1	0	23	5.80
	0.00	1.00	1.67	4.67	.33	.67	8.33	
	0.00	.40	.67	1.88	.13	.27	3.36	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	7	81	94	95	21	2	300	4.53
	2.33	27.00	31.33	31.67	7.00	.67	100.00	
	.94	10.89	12.63	12.77	2.82	.27	40.32	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-165

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	1 .73 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .73 .13	2.84
E	2 1.46 .27	1 .73 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 2.19 .40	1.11
ESE	5 3.65 .67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 3.65 .67	.85
SE	2 1.46 .27	6 4.38 .81	2 1.46 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	10 7.30 1.34	2.51
SSE	1 .73 .13	6 4.38 .81	1 .73 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 5.84 1.08	2.19
S	2 1.46 .27	12 8.76 1.61	3 2.19 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	17 12.41 2.28	2.63
SSW	1 .73 .13	6 4.38 .81	2 1.46 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 6.57 1.21	2.69
SW	0 0.00 0.00	1 .73 .13	3 2.19 .40	1 .73 .13	0 0.00 0.00	0 0.00 0.00	5 3.65 .67	4.27
WSW	0 0.00 0.00	3 2.19 .40	2 1.46 .27	6 4.38 .81	0 0.00 0.00	0 0.00 0.00	11 8.03 1.48	4.48
W	3 2.19 .40	1 .73 .13	9 6.57 1.21	2 1.46 .27	1 .73 .13	0 0.00 0.00	16 11.68 2.15	3.88
WNW	4 2.92 .54	1 .73 .13	10 7.30 1.34	3 2.19 .40	0 0.00 0.00	0 0.00 0.00	18 13.14 2.42	3.71
NW	0 0.00 0.00	7 5.11 .94	2 1.46 .27	6 4.38 .81	0 0.00 0.00	0 0.00 0.00	15 10.95 2.02	3.89
NNW	2 1.46 .27	5 3.65 .67	0 0.00 0.00	0 0.00 0.00	3 2.19 .40	0 0.00 0.00	10 7.30 1.34	3.98
N	2 1.46 .27	4 2.92 .54	3 2.19 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 6.57 1.21	2.79
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	24 17.52 3.23	54 39.42 7.26	37 27.01 4.97	18 13.14 2.42	4 2.92 .54	0 0.00 0.00	137 100.00 18.41	3.22

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-166

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	1.42
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	1.42
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.35 .13	1.42
SSE	1 1.35 .13	7 9.46 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 10.81 1.08	2.25
S	0 0.00 0.00	12 16.22 1.61	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	13 17.57 1.75	2.55
SSW	0 0.00 0.00	4 5.41 .54	3 4.05 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 9.46 .94	2.78
SW	1 1.35 .13	1 1.35 .13	2 2.70 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 5.41 .54	2.96
WSW	0 0.00 0.00	1 1.35 .13	2 2.70 .27	2 2.70 .27	0 0.00 0.00	0 0.00 0.00	5 6.76 .67	4.08
W	4 5.41 .54	1 1.35 .13	4 5.41 .54	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	10 13.51 1.34	3.03
WNW	2 2.70 .27	4 5.41 .54	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 9.46 .94	2.03
NW	1 1.35 .13	1 1.35 .13	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.05 .40	2.21
NNW	1 1.35 .13	3 4.05 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 5.41 .54	1.66
N	2 2.70 .27	4 5.41 .54	1 1.35 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 9.46 .94	2.17
CALM	3 4.05 .40						3 4.05 .40	CALM
TOTAL	18 24.32 2.42	38 51.35 5.11	15 20.27 2.02	3 4.05 .40	0 0.00 0.00	0 0.00 0.00	74 100.00 9.95	2.43

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-167

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78, 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	1 0.00 0.00	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	1.40
SSW	3 10.71 .40	4 14.29 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 25.00 .94	1.83
SW	0 0.00 0.00	3 10.71 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 10.71 .40	2.06
WSW	1 3.57 .13	2 7.14 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 10.71 .40	1.90
W	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	1.42
WNW	2 7.14 .27	1 3.57 .13	0 0.00 0.00	3 10.71 .40	0 0.00 0.00	0 0.00 0.00	6 21.43 .81	3.47
NW	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.57 .13	1.42
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	4 0.00 0.00	4 14.29 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 14.29 .54	1.90
CALM	1 3.57 .13	1 3.57 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.14 .27	1.90
TOTAL	0 0.00 0.00 9 32.14 1.21	0 16 57.14 2.15	0 0 0.00 0.00	0 3 10.71 .40	0 0 0.00 0.00	0 0 0.00 0.00	0 0.00 28 100.00 3.76	CALM 2.20

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-168

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JANUARY,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

ER NUCLEAR STATION
AHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7435-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00	3 .40	1 .13	4 .54	0 0.00	0 0.00	8 1.08	4.15
NE	1 .13	0 0.00	2 .27	1 .13	0 0.00	0 0.00	4 .54	3.91
ENE	1 .13	4 .54	4 .54	1 .13	0 0.00	0 0.00	10 1.34	3.46
E	3 .40	9 1.21	8 1.08	0 0.00	0 0.00	0 0.00	20 2.69	2.75
ESE	7 .94	6 .81	3 .40	1 .13	0 0.00	0 0.00	17 2.28	2.15
SE	4 .54	13 1.75	9 1.21	9 1.21	2 .27	0 0.00	37 4.97	3.78
SSE	2 .27	18 2.42	7 .94	10 1.34	0 0.00	0 0.00	37 4.97	3.46
S	5 .67	37 4.97	23 3.09	11 1.48	2 .27	0 0.00	78 10.48	3.47
SSW	1 .13	17 2.28	13 1.75	4 .54	0 0.00	0 0.00	35 4.70	3.43
SW	2 .27	8 1.08	14 1.88	6 .81	2 .27	0 0.00	32 4.30	4.10
WSW	2 .27	11 1.48	11 1.48	11 1.48	0 0.00	0 0.00	35 4.70	3.87
W	10 1.34	15 2.02	21 2.82	9 1.21	1 .13	0 0.00	56 7.53	3.43
WNW	8 1.08	11 1.48	22 2.96	20 2.69	4 .54	0 0.00	65 8.74	4.32
NW	1 .13	15 2.02	28 3.76	39 5.24	34 4.57	1 .13	118 15.86	5.76
NNW	3 .40	18 2.42	11 1.48	33 4.44	25 3.36	8 1.08	98 13.17	6.22
N	5 .67	16 2.15	13 1.75	42 5.65	13 1.75	2 .27	91 12.23	5.40
CALM	3 .40						3 .40	CALM
TOTAL	58 7.80	201 27.02	190 25.54	201 27.02	85 11.43	11 1.48	744 100.00	4.51

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-169

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 2.82 .30	2 2.82 .30	2 2.82 .30	0 0.00 0.00	0 0.00 0.00	6 8.45 .89	4.26
NE	0 0.00 0.00	0 0.00 0.00	1 1.41 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .15	4.27
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	1 1.41 .15	0 0.00 0.00	1 1.41 .15	0 0.00 0.00	2 2.82 .30	6.63
NNW	0 0.00 0.00	0 0.00 0.00	1 1.41 .15	9 12.68 1.34	7 9.86 1.04	3 4.23 .45	20 28.17 2.98	7.58
N	0 0.00 0.00	0 0.00 0.00	4 5.63 .60	11 15.49 1.64	11 15.49 1.64	2 2.82 .30	28 39.44 4.17	7.09
CALM	0 0.00 0.00	0 0.00 0.00	8 11.27 1.19	4 5.63 .60	2 2.82 .30	0 0.00 0.00	14 19.72 2.08	5.08
TOTAL	0 0.00 0.00	2 2.82 .30	17 23.94 2.53	26 36.62 3.87	21 29.58 3.12	5 7.04 .74	71 100.00 10.57	6.54

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-170

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 2.33 .15	1 2.33 .15	3 6.98 .45	0 0.00 0.00	0 0.00 0.00	5 11.63 .74	5.31
NE	0 0.00 0.00	0 0.00 0.00	3 6.98 .45	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.98 .45	4.27
ENE	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	4.27
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	0 0.00 0.00	1 2.33 .15	7.58
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	0 0.00 0.00	1 2.33 .15	9.48
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	0 0.00 0.00	1 2.33 .15	7.58
WNW	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	1 2.33 .15	0 0.00 0.00	3 6.98 .45	5 11.63 .74	9.39
NW	0 0.00 0.00	0 0.00 0.00	1 2.33 .15	1 2.33 .15	1 2.33 .15	0 0.00 0.00	3 6.98 .45	7.27
NNW	0 0.00 0.00	0 0.00 0.00	3 6.98 .45	9 13.95 .89	4 9.30 .60	3 6.98 .45	16 37.21 2.38	7.08
N	0 0.00 0.00	0 0.00 0.00	5 11.63 .74	1 2.33 .15	1 2.33 .15	0 0.00 0.00	7 16.28 1.04	5.15
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	1 2.33 .15	15 34.88 2.23	12 27.91 1.79	9 20.93 1.34	6 13.95 .89	43 100.00 6.40	6.66

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-171

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	1 1.89 .15	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	4.97
NE	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	4.27
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 7.55 .60	0 0.00 0.00	0 0.00 0.00	4 7.55 .60	5.33
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	5.92
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	5.21
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.77 .30	0 0.00 0.00	2 3.77 .30	8.53
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.89 .15	3 5.66 .45	4 7.55 .60	10.78
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 7.55 .60	0 0.00 0.00	0 0.00 0.00	4 7.55 .60	5.33
N	0 0.00 0.00	0 0.00 0.00	5 9.43 .74	11 20.75 1.64	8 15.09 1.19	6 11.32 .89	30 56.60 4.46	7.28
CALM	0 0.00 0.00	0 0.00	3 5.66 .45	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.66 .45	4.27
							0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	0 0.00 0.00	10 18.87 1.49	23 43.40 3.42	11 20.75 1.64	9 16.98 1.34	53 100.00 7.89	6.90

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-172

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	5 2.26 .74	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.26 .74	4.17
NE	0 0.00 0.00	0 0.00 0.00	6 2.71 .89	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 2.71 .89	3.87
ENE	0 0.00 0.00	1 .45 .15	2 .90 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.36 .45	3.16
E	0 0.00 0.00	2 .90 .30	6 2.71 .89	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 3.62 1.19	3.61
ESE	0 0.00 0.00	1 .45 .15	1 .45 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 .90 .30	3.56
SE	0 0.00 0.00	6 2.71 .89	1 .45 .15	1 .45 .15	1 .45 .15	0 0.00 0.00	9 4.07 1.34	3.69
SSE	0 0.00 0.00	7 3.17 1.04	3 1.36 .45	0 0.00 0.00	5 2.26 .74	3 1.36 .45	18 8.14 2.68	6.16
S	0 0.00 0.00	10 4.52 1.49	6 2.71 .89	7 3.17 1.04	6 2.71 .89	0 0.00 0.00	29 13.12 4.32	4.96
SSW	0 0.00 0.00	6 2.71 .89	13 5.88 1.93	1 .45 .15	2 .90 .30	1 .45 .15	23 10.41 3.42	4.50
SW	0 0.00 0.00	0 0.00 0.00	11 4.98 1.64	6 2.71 .89	1 .45 .15	1 .45 .15	19 8.60 2.83	5.04
WSW	0 0.00 0.00	2 .90 .30	4 1.81 .60	1 .45 .15	1 .45 .15	0 0.00 0.00	8 3.62 1.19	4.62
W	0 0.00 0.00	1 .45 .15	0 0.00 0.00	3 1.36 .45	6 2.71 .89	1 .45 .15	11 4.98 1.64	7.41
WNW	0 0.00 0.00	1 .45 .15	4 1.81 .60	6 2.71 .89	6 2.71 .89	10 4.52 1.49	27 12.22 4.02	8.13
NW	0 0.00 0.00	6 2.71 .89	5 2.26 .74	6 2.71 .89	5 2.26 .74	1 .45 .15	23 10.41 3.42	5.73
NNW	0 0.00 0.00	3 1.36 .45	3 1.36 .45	5 2.26 .74	4 1.81 .60	4 1.81 .60	19 8.60 2.83	6.91
N	0 0.00 0.00	7 3.17 1.04	4 1.81 .60	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 4.98 1.64	3.19
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	53 23.98 7.89	74 33.48 11.01	36 16.29 5.36	37 16.74 5.51	21 9.50 3.12	221 100.00 32.89	5.49

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-173

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 1.31 .30	2 1.31 .30	1 .65 .15	2 1.31 .30	0 0.00 0.00	0 0.00 0.00	7 4.58 1.04	3.25
NE	0 0.00 0.00	2 1.31 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.31 .30	2.13
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	1 .65 .15	0 0.00 0.00	3 1.96 .45	0 0.00 0.00	0 0.00 0.00	4 2.61 .60	4.86
SE	4 2.61 .60	2 1.31 .30	0 0.00 0.00	3 1.96 .45	4 2.61 .60	0 0.00 0.00	13 8.50 1.93	4.74
SSE	1 .65 .15	9 5.88 1.34	8 5.23 1.19	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	18 11.76 2.68	3.05
S	5 3.27 .74	16 10.46 2.38	10 6.54 1.49	1 .65 .15	1 .65 .15	1 .65 .15	34 22.22 5.06	3.44
SSW	0 0.00 0.00	3 1.96 .45	2 1.31 .30	1 .65 .15	0 0.00 0.00	0 0.00 0.00	6 3.92 .89	3.24
SW	0 0.00 0.00	3 1.96 .45	2 1.31 .30	1 .65 .15	0 0.00 0.00	0 0.00 0.00	6 3.92 .89	3.55
WSW	0 0.00 0.00	0 0.00 0.00	5 1.31 .30	2 1.31 .30	2 1.31 .30	0 0.00 0.00	6 3.92 .89	6.08
W	0 0.00 0.00	0 0.00 0.00	8 5.23 1.19	6 3.92 .89	2 1.31 .30	0 0.00 0.00	16 10.46 2.38	5.10
WNW	0 0.00 0.00	2 1.31 .30	7 4.58 1.04	6 3.92 .89	1 .65 .15	0 0.00 0.00	16 10.46 2.38	4.59
NW	0 0.00 0.00	5 3.27 .74	3 1.96 .45	6 3.92 .89	0 0.00 0.00	0 0.00 0.00	14 9.15 2.08	4.16
NNW	1 .65 .15	2 1.31 .30	1 .65 .15	1 .65 .15	0 0.00 0.00	0 0.00 0.00	5 3.27 .74	2.94
N	3 1.96 .45	2 1.31 .30	1 .65 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 3.92 .89	2.05
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	16 10.46 2.38	49 32.03 7.29	45 29.41 6.70	32 20.92 4.76	10 6.54 1.49	1 .65 .15	153 100.00 22.77	3.91

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-174

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	1.90
NE	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	3 4.11 .45	2.84
ENE	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	.95
E	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	1.42
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	2 2.74 .30	4 5.48 .60	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 8.22 .89	1.97
SSE	4 5.48 .60	7 9.59 1.04	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 15.07 1.64	1.86
S	1 1.37 .15	10 13.70 1.49	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	12 16.44 1.79	2.33
SSW	0 0.00 0.00	4 5.48 .60	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 6.85 .74	2.44
SW	0 0.00 0.00	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	2.37
WSW	0 0.00 0.00	1 1.37 .15	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	3.79
W	0 0.00 0.00	1 1.37 .15	2 2.74 .30	7 9.59 1.04	1 1.37 .15	0 0.00 0.00	11 15.07 1.64	5.52
WNW	0 0.00 0.00	1 1.37 .15	3 4.11 .45	2 2.74 .30	0 0.00 0.00	0 0.00 0.00	6 8.22 .89	4.66
NW	1 1.37 .15	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	2.13
NNW	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.37 .15	1.42
N	0 0.00 0.00	1 1.37 .15	1 1.37 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.74 .30	2.84
CALM	5 6.85 .74						5 6.85 .74	CALM
TOTAL	19 26.03 2.83	34 46.58 5.06	9 12.33 1.34	10 13.70 1.49	1 1.37 .15	0 0.00 0.00	73 100.00 10.86	2.75

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-175

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 3.45 .30	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.17 .45	1.58
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.72 .15	.95
E	1 1.72 .15	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.45 .30	1.66
ESE	3 5.17 .45	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.17 .45	1.31
SE	0 0.00 0.00	4 6.90 .60	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 6.90 .60	2.13
SSE	0 0.00 0.00	13 22.41 1.93	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	14 24.14 2.08	2.20
S	0 0.00 0.00	5 8.62 .74	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 10.34 .89	2.37
SSW	2 3.45 .30	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.17 .45	1.26
SW	5 8.62 .74	3 5.17 .45	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 15.52 1.34	1.61
WSW	3 5.17 .45	2 3.45 .30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 8.62 .74	1.56
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.72 .15	1.90
NW	1 1.72 .15	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.72 .15	.95
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	2 3.45 .30	4 6.90 .60	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 10.34 .89	1.97
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	34 5.06 2.98	35 60.34 5.21	3 5.17 .45	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	58 100.00 8.63	1.85

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-176

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: FEBRUARY,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	4 .60	8 1.19	10 1.49	8 1.19	0 0.00	0 0.00	30 4.46	3.41
NE	2 .30	2 .30	11 1.64	1 .15	0 0.00	0 0.00	16 2.38	3.59
ENE	2 .30	1 .15	3 .45	0 0.00	0 0.00	0 0.00	6 .89	2.61
E	3 .45	3 .45	6 .89	0 0.00	0 0.00	0 0.00	12 1.79	2.92
ESE	3 .45	2 .30	1 .15	3 .45	0 0.00	0 0.00	9 1.34	3.39
SE	5 .89	16 2.38	1 .15	4 .60	5 .74	0 0.00	31 4.76	3.60
SSE	5 .74	36 5.36	12 1.79	0 0.00	5 .74	3 .45	61 9.08	3.56
S	6 .89	41 6.10	18 2.68	12 1.79	7 1.04	1 .15	85 12.65	3.82
SSW	2 .30	14 2.08	16 2.38	4 .60	2 .30	1 .15	39 5.80	3.87
SW	5 .74	8 1.19	14 2.08	8 1.19	2 .30	1 .15	38 5.65	3.92
WSW	3 .45	5 .74	7 1.04	3 .45	6 .89	0 0.00	24 3.57	4.81
W	0 0.00	2 .30	10 1.49	16 2.38	10 1.49	1 .15	39 5.80	5.93
WNW	0 0.00	5 .74	16 2.38	15 2.23	9 1.34	16 2.38	61 9.08	6.99
NW	2 .30	12 1.79	10 1.49	26 3.87	13 1.93	4 .60	67 9.97	5.82
NNW	2 .30	5 .74	16 2.38	34 5.06	27 4.02	15 2.23	99 14.73	6.85
N	5 .74	14 2.08	22 3.27	5 .74	3 .45	0 0.00	49 7.29	3.77
CALM	5 .74						5 .74	CALM
TOTAL	55 8.18	174 25.89	173 25.74	139 20.68	89 13.24	42 6.25	672 100.00	4.81

NUMBER OF VALID OBSERVATIONS 672 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 672 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-177

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78, 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.17 .27	0 0.00 0.00	0 0.00 0.00	2 4.17 .27	5.69
SSE	0 0.00 0.00	0 0.00 0.00	2 4.17 .27	1 2.08 .13	0 0.00 0.00	0 0.00 0.00	3 6.25 .40	4.74
S	0 0.00 0.00	0 0.00 0.00	1 2.08 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.08 .13	3.79
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.08 .13	5 10.42 .67	6 12.50 .81	10.98
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.17 .27	0 0.00 0.00	0 0.00 0.00	2 4.17 .27	5.69
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 10.42 .67	1 2.08 .13	0 0.00 0.00	6 12.50 .81	6.32
N	0 0.00 0.00	0 0.00 0.00	2 4.17 .27	10 20.83 1.34	10 20.83 1.34	0 0.00 0.00	22 45.83 2.95	7.11
CALM	0 0.00 0.00	0 0.00 0.00	3 6.25 .40	2 4.17 .27	1 2.08 .13	0 0.00 0.00	6 12.50 .81	5.61
TOTAL	0 0.00 0.00	0 0.00 0.00	8 16.67 1.08	22 45.83 2.96	13 27.08 1.75	5 10.42 .67	0 0.00 0.00 48 100.00 6.45	CALM 6.97

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-178

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEMAHA CO
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	4.27
NE	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	3.32
ENE	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	3.32
E	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	1 2.17 .13	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	5.69
ESE	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	4.03
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	2 4.35 .27	3 6.52 .40	10.11
S	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	2 4.35 .27	3 6.52 .40	0 0.00 0.00	6 13.04 .81	7.03
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.52 .40	0 0.00 0.00	3 6.52 .40	8.53
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	1 2.17 .13	2 4.35 .27	9.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	2 4.35 .27	3 6.52 .40	10.11
W	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	0 0.00 0.00	1 2.17 .13	0 0.00 0.00	3 6.52 .40	5.21
WNW	0 0.00 0.00	0 0.00 0.00	1 2.17 .13	4 8.70 .54	1 2.17 .13	0 0.00 0.00	6 13.04 .81	6.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.52 .40	0 0.00 0.00	3 6.52 .40	9.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	0 0.00 0.00	0 0.00 0.00	2 4.35 .27	5.92
N	0 0.00 0.00	0 0.00 0.00	3 6.52 .40	3 6.52 .40	2 4.35 .27	0 0.00 0.00	8 17.39 1.08	5.75
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	0 0.00 0.00	13 28.26 1.75	15 32.61 2.02	13 28.26 1.75	5 10.87 .67	46 100.00 6.18	6.81

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-179

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	2	0	0	0	2	4.03
	0.00	0.00	1.92	0.00	0.00	0.00	1.92	
	0.00	0.00	.27	0.00	0.00	0.00	.27	
NE	0	0	1	1	0	0	2	4.50
	0.00	0.00	.96	.96	0.00	0.00	1.92	
	0.00	0.00	.13	.13	0.00	0.00	.27	
ENE	0	0	4	0	0	0	4	4.15
	0.00	0.00	3.85	0.00	0.00	0.00	3.85	
	0.00	0.00	.54	0.00	0.00	0.00	.54	
E	0	0	3	1	0	0	4	4.63
	0.00	0.00	2.88	.96	0.00	0.00	3.85	
	0.00	0.00	.40	.13	0.00	0.00	.54	
ESE	0	0	1	1	0	0	2	5.69
	0.00	0.00	.96	.96	0.00	0.00	1.92	
	0.00	0.00	.13	.13	0.00	0.00	.27	
SE	0	0	1	1	0	0	2	5.22
	0.00	0.00	.96	.96	0.00	0.00	1.92	
	0.00	0.00	.13	.13	0.00	0.00	.27	
SSE	0	0	0	0	1	2	3	9.95
	0.00	0.00	0.00	0.00	.96	1.92	2.88	
	0.00	0.00	0.00	0.00	.13	.27	.40	
S	0	0	4	4	5	0	13	6.56
	0.00	0.00	3.85	3.85	4.81	0.00	12.50	
	0.00	0.00	.54	.54	.67	0.00	1.75	
SSW	0	0	2	2	2	0	6	6.48
	0.00	0.00	1.92	1.92	1.92	0.00	5.77	
	0.00	0.00	.27	.27	.27	0.00	.81	
SW	0	0	1	7	2	0	10	6.63
	0.00	0.00	.96	6.73	1.92	0.00	9.62	
	0.00	0.00	.13	.94	.27	0.00	1.35	
WSW	0	0	2	1	0	2	5	7.68
	0.00	0.00	1.92	.96	0.00	1.92	4.81	
	0.00	0.00	.27	.13	0.00	.27	.67	
W	0	0	1	1	1	0	3	5.69
	0.00	0.00	.96	.96	.96	0.00	2.88	
	0.00	0.00	.13	.13	.13	0.00	.40	
WNW	0	1	0	6	4	4	15	8.06
	0.00	.96	0.00	5.77	3.85	3.85	14.42	
	0.00	.13	0.00	.81	.54	.54	2.02	
NW	0	1	0	3	7	0	11	7.07
	0.00	.96	0.00	2.88	6.73	0.00	10.58	
	0.00	.13	0.00	.40	.94	0.00	1.48	
NNW	0	2	1	5	5	0	13	6.56
	0.00	1.92	.96	4.81	4.81	0.00	12.50	
	0.00	.27	.13	.67	.67	0.00	1.75	
N	0	0	1	7	1	0	9	6.00
	0.00	0.00	.96	6.73	.96	0.00	8.65	
	0.00	0.00	.13	.94	.13	0.00	1.21	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	4	24	40	28	8	104	6.61
	0.00	3.85	23.08	38.46	26.92	7.69	100.00	
	0.00	.54	3.23	5.38	3.76	1.08	13.98	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

TABLE 5-180

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .29 .13	1 .29 .13	0 0.00 0.00	2 .58 .27	6.88
NE	0 0.00 0.00	0 0.00 0.00	3 .87 .40	3 .87 .40	1 .29 .13	0 0.00 0.00	7 2.02 .94	5.62
ENE	0 0.00 0.00	2 .58 .27	2 .58 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 1.16 .54	3.31
E	0 0.00 0.00	3 .87 .40	13 3.76 1.75	1 .29 .13	0 0.00 0.00	0 0.00 0.00	17 4.91 2.28	3.76
ESE	0 0.00 0.00	2 .58 .27	17 4.91 2.28	10 2.89 1.34	3 .87 .40	0 0.00 0.00	32 9.25 4.30	5.04
SE	0 0.00 0.00	3 .87 .40	8 2.31 1.08	25 7.23 3.36	14 4.05 1.88	0 0.00 0.00	50 14.45 6.72	6.16
SSE	0 0.00 0.00	0 0.00 0.00	2 .58 .27	18 5.20 2.42	9 2.60 1.21	9 2.60 1.21	38 10.98 5.11	8.01
S	0 0.00 0.00	4 1.16 .54	10 2.89 1.34	14 4.05 1.88	10 2.89 1.34	0 0.00 0.00	38 10.98 5.11	5.44
SSW	0 0.00 0.00	0 0.00 0.00	4 1.16 .54	5 1.45 .67	7 2.02 .94	0 0.00 0.00	16 4.62 2.15	6.78
SW	0 0.00 0.00	2 .58 .27	1 .29 .13	4 1.16 .54	15 4.34 2.02	2 .58 .27	24 6.94 3.23	7.76
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 1.16 .54	5 1.45 .67	6 1.73 .81	15 4.34 2.02	9.39
W	0 0.00 0.00	2 .58 .27	7 2.02 .94	20 5.78 2.69	3 .87 .40	3 .87 .40	35 10.12 4.70	6.57
WNW	0 0.00 0.00	1 .29 .13	2 .58 .27	12 3.47 1.61	5 1.45 .67	5 1.45 .67	25 7.23 3.36	7.66
NW	0 0.00 0.00	1 .29 .13	6 1.73 .81	4 1.16 .54	11 3.18 1.48	2 .58 .27	24 6.94 3.23	7.05
NNW	0 0.00 0.00	0 0.00 0.00	8 2.31 1.08	3 .87 .40	0 0.00 0.00	1 .29 .13	12 3.47 1.61	5.33
N	0 0.00 0.00	1 .29 .13	2 .58 .27	3 .87 .40	0 0.00 0.00	0 0.00 0.00	6 1.73 .81	4.74
CALM	1 .29 .13						1 .29 .13	CALM
TOTAL	1 .29 .13	21 6.07 2.82	85 24.57 11.42	127 36.71 17.07	84 24.28 11.29	28 8.09 3.76	346 100.00 46.51	6.49

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-181

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	2 1.53 .29	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.53 .27	1.42
E	0 0.00 0.00	0 0.00 0.00	2 1.53 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.53 .27	3.55
ESE	1 .76 .13	6 4.58 .81	2 1.53 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 6.87 1.21	4.00
SE	4 3.05 .54	9 6.87 1.21	17 12.98 2.28	1 .76 .13	0 0.00 0.00	0 0.00 0.00	31 23.66 4.17	5.03
SSE	6 4.58 .81	2 1.53 .27	6 4.58 .81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	14 10.69 1.88	4.23
S	4 3.05 .54	2 1.53 .27	17 12.98 2.28	4 3.05 .54	0 0.00 0.00	0 0.00 0.00	27 20.61 3.63	5.64
SSW	0 0.00 0.00	0 0.00 0.00	1 .76 .13	6 4.58 .81	2 1.53 .27	0 0.00 0.00	9 6.87 1.21	6.37
SW	0 0.00 0.00	0 0.00 0.00	3 2.29 .40	0 0.00 0.00	2 1.53 .27	0 0.00 0.00	5 3.82 .67	5.97
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	1 .76 .13	7.11
W	1 .76 .13	0 0.00 0.00	1 .76 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.53 .27	3.08
WNW	0 0.00 0.00	3 2.29 .40	3 2.29 .40	1 .76 .13	0 0.00 0.00	0 0.00 0.00	7 5.34 .94	3.59
NW	2 1.53 .27	2 1.53 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 3.05 .54	3.32
NNW	1 .76 .13	4 3.05 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 3.82 .67	2.27
N	0 0.00 0.00	3 2.29 .40	3 2.29 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 4.58 .81	3.16
CALM	7 5.34 .94						7 5.34 .94	CALM
TOTAL	27 20.61 3.63	34 25.95 4.57	50 38.17 6.72	9 6.87 1.21	0 0.00 0.00	0 0.00 0.00	131 100.00 17.61	4.45

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-182

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	2 3.85 .27	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	2.53
SE	1 1.92 .13	3 5.77 .40	2 3.85 .27	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	7 13.46 .94	3.05
SSE	1 1.92 .13	2 3.85 .27	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	4 7.69 .54	2.46
S	0 0.00 0.00	8 15.38 1.08	3 5.77 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 21.15 1.48	2.54
SSW	0 0.00 0.00	1 1.92 .13	3 5.77 .40	4 7.69 .54	0 0.00 0.00	0 0.00 0.00	8 15.38 1.08	4.68
SW	1 1.92 .13	0 0.00 0.00	1 1.92 .13	5 9.62 .67	0 0.00 0.00	0 0.00 0.00	7 13.46 .94	5.01
WSW	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	1.90
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	3 5.77 .40	4.27
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	1 1.92 .13	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	2.61
N	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	1.18
CALM	4 7.69 .54						4 7.69 .54	CALM
TOTAL	12 23.08 1.61	16 30.77 2.15	11 21.15 1.48	13 25.00 1.75	0 0.00 0.00	0 0.00 0.00	52 100.00 6.99	3.14

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-183

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	1.42
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	.95
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 5.88 .13	.95
SSE	1 5.88 .13	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 11.76 .27	1.66
S	1 5.88 .13	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 11.76 .27	1.66
SSW	1 5.88 .13	0 0.00 0.00	4 23.53 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 29.41 .67	3.22
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	2 11.76 .27	1 5.88 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 17.65 .40	1.58
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	2 11.76 .27						2 11.76 .27	CALM
TOTAL	10 58.82 1.34	3 17.65 .40	4 23.53 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	17 100.00 2.28	1.81

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-184

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MARCH,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .13	0 0.00	3 .40	1 .13	1 .13	0 0.00	6 .81	4.58
NE	0 0.00	0 0.00	5 .67	4 .54	1 .13	0 0.00	10 1.34	5.17
ENE	2 .27	2 .27	7 .94	0 0.00	0 0.00	0 0.00	11 1.48	3.27
E	1 .13	3 .40	19 2.55	3 .40	0 0.00	0 0.00	26 3.49	3.92
ESE	2 .27	3 .40	27 3.63	15 2.02	3 .40	0 0.00	50 6.72	4.71
SE	2 .27	10 1.34	22 2.96	45 6.05	15 2.02	0 0.00	94 12.63	5.44
SSE	2 .27	9 1.21	5 .67	26 3.49	10 1.34	13 1.75	65 8.74	6.81
S	1 .13	17 2.28	20 2.69	37 4.97	23 3.09	5 .67	103 13.84	5.81
SSW	1 .13	1 .13	14 1.88	17 2.28	14 1.88	0 0.00	47 6.32	6.04
SW	1 .13	2 .27	6 .81	17 2.28	19 2.55	3 .40	48 6.45	6.99
WSW	2 .27	2 .27	2 .27	7 .94	5 .67	10 1.34	28 3.76	7.97
W	1 .13	2 .27	11 1.48	21 2.82	5 .67	3 .40	43 5.78	6.25
WNW	0 0.00	6 .81	6 .81	27 3.63	10 1.34	9 1.21	58 7.80	6.86
NW	0 0.00	4 .54	8 1.08	12 1.61	22 2.96	2 .27	48 6.45	6.77
NNW	2 .27	6 .81	12 1.61	20 2.69	15 2.02	1 .13	56 7.53	5.97
N	2 .27	4 .54	12 1.61	15 2.02	4 .54	0 0.00	37 4.97	4.96
CALM	14 1.88						14 1.88	CALM
TOTAL	34 4.57	71 9.54	179 24.06	267 35.89	147 19.76	46 6.18	744 100.00	5.86

NUMBER OF VALID OBSERVATIONS 744 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS 744 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-185

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTWICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	3 3.75 .42	1 1.25 .14	0 0.00 0.00	5 6.25 .69	5.88
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	6.16
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	0 0.00 0.00	1 1.25 .14	7.58
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.50 .28	8 10.00 1.11	10 12.50 1.39	12.56
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	1 1.25 .14	2 2.50 .28	9.71
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	6.16
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	0 0.00 0.00	0 0.00 0.00	1 1.25 .14	5.69
WNW	0 0.00 0.00	0 0.00 0.00	5 6.25 .69	1 1.25 .14	2 2.50 .28	0 0.00 0.00	8 10.00 1.11	5.63
NW	0 0.00 0.00	0 0.00 0.00	2 2.50 .28	0 0.00 0.00	7 8.75 .97	6 7.50 .83	15 18.75 2.08	9.26
NNW	0 0.00 0.00	2 2.50 .28	1 1.25 .14	6 7.50 .83	11 13.75 1.53	0 0.00 0.00	20 25.00 2.78	6.82
N	0 0.00 0.00	3 3.75 .42	5 6.25 .69	8 10.00 1.11	0 0.00 0.00	0 0.00 0.00	16 20.00 2.22	4.98
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	5 6.25 .69	14 17.50 1.94	21 26.25 2.92	25 31.25 3.47	15 18.75 2.08	80 100.00 11.11	7.50

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-186

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7535-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	5.21
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	5.21
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	3.79
ESE	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	4.74
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	5.69
SSE	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	5 10.00 .69	1 2.00 .14	0 0.00 0.00	7 14.00 .97	5.82
S	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	2 4.00 .28	4 8.00 .56	2 4.00 .28	9 18.00 1.25	7.37
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.00 .42	6 12.00 .83	9 18.00 1.25	11.43
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.00 .42	0 0.00 0.00	3 6.00 .42	9.16
WSW	0 0.00 0.00	1 2.00 .14	1 2.00 .14	3 6.00 .42	1 2.00 .14	0 0.00 0.00	6 12.00 .83	5.61
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	6.16
WNW	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	2 4.00 .28	6.87
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	1 2.00 .14	0 0.00 0.00	2 4.00 .28	7.82
NNW	0 0.00 0.00	0 0.00 0.00	1 2.00 .14	1 2.00 .14	1 2.00 .14	0 0.00 0.00	3 6.00 .42	6.79
N	0 0.00 0.00	1 2.00 .14	0 0.00 0.00	2 4.00 .28	0 0.00 0.00	0 0.00 0.00	3 6.00 .42	4.90
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	4 8.00 .56	5 10.00 .69	18 36.00 2.50	14 28.00 1.94	9 18.00 1.25	50 100.00 6.94	7.33

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-187

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7535-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	2.84
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	5.21
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	3.32
ESE	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	3 4.23 .42	0 0.00 0.00	0 0.00 0.00	4 5.63 .56	5.93
SE	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	5 7.04 .69	1 1.41 .14	0 0.00 0.00	9 12.68 1.25	5.48
SSE	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	1 1.41 .14	1 1.41 .14	0 0.00 0.00	5 7.04 .69	5.38
S	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	6 8.45 .83	0 0.00 0.00	0 0.00 0.00	9 12.68 1.25	5.53
SSW	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	6 8.45 .83	8.22
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	2 2.82 .28	0 0.00 0.00	3 4.23 .42	7.74
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	1 1.41 .14	7.58
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	5.21
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	7.35
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.41 .14	1 1.41 .14	0 0.00 0.00	2 2.82 .28	9.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 4.23 .42	1 1.41 .14	4 5.63 .56	4.18
N	0 0.00 0.00	3 4.23 .42	1 1.41 .14	2 2.82 .28	0 0.00 0.00	0 0.00 0.00	6 8.45 .83	5.37
CALM	0 0.00 0.00	0 0.00 0.00	9 12.68 1.25	9 12.68 1.25	0 0.00 0.00	0 0.00 0.00	18 25.35 2.50	CALM
TOTAL	0 0.00 0.00	4 5.63 .56	24 33.80 3.33	30 42.25 4.17	9 12.68 1.25	4 5.63 .56	0 0.00 0.00 71 100.00 9.86	5.90

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-188

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	3	5	0	0	9	4.85
	0.00	.39	1.18	1.97	0.00	0.00	3.54	
	0.00	.14	.42	.69	0.00	0.00	1.25	
NE	1	2	4	0	0	0	7	3.32
	.39	.79	1.57	0.00	0.00	0.00	2.76	
	.14	.28	.56	0.00	0.00	0.00	.97	
ENE	2	5	2	0	0	0	9	2.63
	.79	1.97	.79	0.00	0.00	0.00	3.54	
	.28	.69	.28	0.00	0.00	0.00	1.25	
E	1	6	15	1	0	0	23	3.46
	.39	2.36	5.91	.39	0.00	0.00	9.06	
	.14	.83	2.08	.14	0.00	0.00	3.19	
ESE	0	7	13	4	0	0	24	3.87
	0.00	2.76	5.12	1.57	0.00	0.00	9.45	
	0.00	.97	1.81	.56	0.00	0.00	3.33	
SE	2	6	12	8	0	0	28	4.05
	.79	2.36	4.72	3.15	0.00	0.00	11.02	
	.28	.83	1.67	1.11	0.00	0.00	3.89	
SSE	1	3	3	1	3	0	11	4.43
	.39	1.18	1.18	.39	1.18	0.00	4.33	
	.14	.42	.42	.14	.42	0.00	1.53	
S	1	5	10	7	3	1	27	5.65
	.39	.79	3.94	2.76	2.36	.39	10.63	
	.14	.28	1.39	.97	.83	.14	3.75	
SSW	0	2	5	1	3	8	19	8.46
	0.00	.79	1.97	.39	1.18	3.15	7.48	
	0.00	.28	.69	.14	.42	1.11	2.64	
SW	0	0	1	3	3	1	8	7.58
	0.00	0.00	.39	1.18	1.18	.39	3.15	
	0.00	0.00	.14	.42	.42	.14	1.11	
WSW	0	2	1	2	0	0	5	4.36
	0.00	.79	.39	.79	0.00	0.00	1.97	
	0.00	.28	.14	.28	0.00	0.00	.69	
W	0	3	4	0	1	0	8	3.97
	0.00	1.18	1.57	0.00	.39	0.00	3.15	
	0.00	.42	.56	0.00	.14	0.00	1.11	
WNW	0	3	0	2	2	0	7	5.21
	0.00	1.18	0.00	.79	.79	0.00	2.76	
	0.00	.42	0.00	.28	.28	0.00	.97	
NW	0	2	6	5	6	4	23	7.03
	0.00	.79	2.36	1.97	2.36	1.57	9.06	
	0.00	.28	.83	.69	.83	.56	3.19	
NNW	0	5	7	4	1	1	18	4.69
	0.00	1.97	2.76	1.57	.39	.39	7.09	
	0.00	.69	.97	.56	.14	.14	2.50	
N	0	5	13	6	2	0	26	4.50
	0.00	1.97	5.12	2.36	.79	0.00	10.24	
	0.00	.69	1.81	.83	.28	0.00	3.61	
CALM	2						2	CALM
	.79						.79	
	.28						.28	
TOTAL	10	54	99	49	27	15	254	4.93
	3.94	21.26	38.98	19.29	10.63	5.91	100.00	
	1.39	7.50	13.75	6.81	3.75	2.08	35.28	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-189

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	7 3.74 .97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.74 .97	1.30
NE	0 0.00 0.00	1 .53 .14	0 0.00 0.00	0 0.00 0.00	1 .53 .14	0 0.00 0.00	2 1.07 .28	5.93
ENE	0 0.00 0.00	2 1.07 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.07 .28	2.84
E	0 0.00 0.00	3 1.60 .42	1 .53 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.14 .56	2.96
ESE	5 2.67 .69	16 8.56 2.22	6 3.21 .83	2 1.07 .28	0 0.00 0.00	0 0.00 0.00	29 15.51 4.03	2.73
SE	1 .53 .14	7 3.74 .97	7 3.74 .97	3 1.60 .42	0 0.00 0.00	0 0.00 0.00	18 9.63 2.50	3.45
SSE	2 1.07 .28	3 1.60 .42	2 1.07 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.74 .97	2.31
S	3 1.60 .42	6 1.07 .28	17 9.09 2.36	9 4.81 1.25	1 .53 .14	0 0.00 0.00	32 17.11 4.44	4.40
SSW	0 0.00 0.00	1 .53 .14	3 1.60 .42	11 5.88 1.53	0 0.00 0.00	1 .53 .14	16 8.56 2.22	5.84
SW	0 0.00 0.00	0 0.00 0.00	4 2.14 .56	8 4.28 1.11	0 0.00 0.00	0 0.00 0.00	12 6.42 1.67	5.57
WSW	0 0.00 0.00	1 .53 .14	0 0.00 0.00	5 2.67 .69	0 0.00 0.00	0 0.00 0.00	6 3.21 .83	5.37
W	1 .53 .14	1 .53 .14	1 .53 .14	1 .53 .14	0 0.00 0.00	0 0.00 0.00	4 2.14 .56	3.43
WNW	0 0.00 0.00	1 .53 .14	1 .53 .14	1 .53 .14	0 0.00 0.00	0 0.00 0.00	3 1.60 .42	3.95
NW	1 .53 .14	2 1.07 .28	1 .53 .14	1 .53 .14	0 0.00 0.00	0 0.00 0.00	5 2.67 .69	3.22
NNW	0 0.00 0.00	7 3.74 .97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7 3.74 .97	2.50
N	3 1.60 .42	10 5.35 1.39	2 1.07 .28	1 .53 .14	0 0.00 0.00	0 0.00 0.00	16 8.56 2.22	2.64
CALM	17 9.09 2.36						17 9.09 2.36	CALM
TOTAL	80 21.39 5.56	57 30.48 7.92	45 24.06 6.25	42 22.46 5.83	2 1.07 .28	1 .53 .14	187 100.00 25.97	3.37

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-190

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	1.42
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	1.90
ESE	0 0.00 0.00	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	2.13
SE	2 3.85 .28	1 1.92 .14	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 9.62 .69	2 28
SSE	2 3.85 .28	3 5.77 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 9.62 .69	1.90
S	1 1.92 .14	5 9.62 .69	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	7 13.46 .97	3.72
SSW	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	3.32
SW	0 0.00 0.00	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	2.37
WSW	1 1.92 .14	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.77 .42	2.21
W	1 1.92 .14	1 1.92 .14	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.77 .42	2.53
WNW	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	.95
NW	0 0.00 0.00	1 1.92 .14	1 1.92 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	3.08
NNW	0 0.00 0.00	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .28	2.13
N	3 5.77 .42	2 3.85 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 9.62 .69	1.52
CALM	11 21.15 1.53						11 21.15 1.53	CALM
TOTAL	24 46.15 3.33	22 42.31 3.06	5 9.62 .69	0 0.00 0.00	0 0.00 0.00	1 1.92 .14	52 100.00 7.22	1.86

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-191

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1.90
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	1.42
SE	3 11.54 .42	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 11.54 .42	1.74
SSE	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	3.32
S	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1.90
SSW	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	1.66
SW	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1.90
WSW	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	1.66
W	3 11.54 .42	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 15.38 .56	2.25
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1.90
NNW	0 0.00 0.00	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	1.90
N	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	1.66
CALM	3 11.54 .42						3 11.54 .42	CALM
TOTAL	13 50.00 1.81	11 42.31 1.53	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	26 100.00 3.61	1.73

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-192

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: APRIL,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	9 1.25	3 .42	4 .56	9 1.25	1 .14	0 0.00	26 3.61	3.65
NE	1 .14	3 .42	4 .56	2 .28	1 .14	0 0.00	11 1.53	4.14
ENE	2 .28	7 .97	2 .28	0 0.00	0 0.00	0 0.00	11 1.53	2.67
E	1 .14	11 1.53	18 2.50	1 .14	0 0.00	0 0.00	31 4.31	3.30
ESE	7 .97	25 3.47	21 2.92	9 1.25	0 0.00	0 0.00	62 8.61	3.35
SE	7 .97	15 2.08	24 3.33	17 2.36	1 .14	0 0.00	64 8.89	3.86
SSE	5 .69	10 1.39	10 1.39	8 1.11	5 .69	0 0.00	38 5.28	4.07
S	5 .69	11 1.53	30 4.17	24 3.33	12 1.67	4 .56	86 11.94	5.18
SSW	1 .14	4 .56	12 1.67	12 1.67	8 1.11	26 3.61	63 8.75	8.55
SW	0 0.00	2 .28	5 .69	12 1.67	9 1.25	2 .28	30 4.17	6.73
WSW	2 .28	7 .97	2 .28	11 1.53	2 .28	0 0.00	24 3.33	4.64
W	5 .69	5 .69	7 .97	4 .56	1 .14	0 0.00	22 3.06	3.60
WNW	1 .14	5 .69	6 .83	5 .69	5 .69	1 .14	23 3.19	5.34
NW	1 .14	6 .83	10 1.39	7 .97	17 2.36	11 1.53	52 7.22	7.24
NNW	0 0.00	21 2.92	10 1.39	13 1.81	13 1.81	1 .14	58 8.06	5.03
N	7 .97	22 3.06	29 4.03	26 3.61	2 .28	0 0.00	86 11.94	4.20
CALM	33 4.58						33 4.58	CALM
TOTAL	87 12.08	157 21.81	194 26.94	160 22.22	77 10.69	45 6.25	720 100.00	4.74

NUMBER OF VALID OBSERVATIONS	720	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	720	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

1

Revision 1
1/78

TABLE 5-193

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	2 2.78 .29	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	4.74
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	4.27
SE	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	2.84
SSE	0 0.00 0.00	0 0.00 0.00	2 0.00 .27	2 2.78 .27	4 5.56 .54	1 1.39 .13	7 9.72 .94	7.77
S	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	14 19.44 1.88	13 18.06 1.75	2 2.78 .27	30 41.67 4.03	7.56
SSW	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	3 4.17 .40	1 1.39 .13	0 0.00 0.00	5 6.94 .67	8.53
SW	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	2.84
WSW	0 0.00 0.00	2 2.78 .27	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	3 4.17 .40	4.74
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	3 4.17 .40	4 5.56 .54	10.19
WNW	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	2.84
NW	0 0.00 0.00	1 1.39 .13	0 0.00 0.00	6 8.33 .81	4 5.56 .54	0 0.00 0.00	11 15.28 1.48	6.59
NNW	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	1 1.39 .13	0 0.00 0.00	0 0.00 0.00	2 2.78 .27	5.45
N	0 0.00 0.00	0 0.00 0.00	1 1.39 .13	3 4.17 .40	0 0.00 0.00	0 0.00 0.00	4 5.56 .54	5.57
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	7 9.72 .94	5 6.94 .67	27 37.50 3.63	26 36.11 3.49	7 9.72 .94	72 100.00 9.68	7.04

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-194

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10 ±7 METERS
TABLE GENERATED: 01/03/ 8. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NE	0	0	1	0	0	0	1	4.74
	0.00	0.00	1.39	0.00	0.00	0.00	1.39	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
ENE	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	0	0	1	0	0	0	1	4.27
	0.00	0.00	1.39	0.00	0.00	0.00	1.39	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
ESE	0	1	1	0	1	0	3	5.06
	0.00	1.39	1.39	0.00	1.39	0.00	4.17	
	0.00	.13	.13	0.00	.13	0.00	.40	
SE	0	0	2	5	0	0	7	5.49
	0.00	0.00	2.78	6.94	0.00	0.00	9.72	
	0.00	0.00	.27	.67	0.00	0.00	.94	
SSE	1	1	0	15	5	2	24	6.55
	1.39	1.39	0.00	20.83	6.94	2.78	33.33	
	.13	.13	0.00	2.02	.67	.27	3.23	
S	0	1	3	8	6	0	18	6.35
	0.00	1.39	4.17	11.11	8.33	0.00	25.00	
	0.00	.13	.40	1.08	.81	0.00	2.42	
SSW	0	1	3	5	1	0	10	7.50
	0.00	1.39	0.00	4.17	6.94	1.39	13.89	
	0.00	.13	0.00	.40	.67	.13	1.34	
SW	0	0	0	0	2	0	2	8.29
	0.00	0.00	0.00	0.00	2.78	0.00	2.78	
	0.00	0.00	0.00	0.00	.27	0.00	.27	
WSW	0	0	0	0	0	2	2	11.14
	0.00	0.00	0.00	0.00	0.00	2.78	2.78	
	0.00	0.00	0.00	0.00	0.00	.27	.27	
W	0	0	1	0	0	0	1	4.74
	0.00	0.00	1.39	0.00	0.00	0.00	1.39	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
WNW	0	1	0	0	0	0	1	1.90
	0.00	1.39	0.00	0.00	0.00	0.00	1.39	
	0.00	.13	0.00	0.00	0.00	0.00	.13	
NW	0	0	0	1	0	0	1	5.69
	0.00	0.00	0.00	1.39	0.00	0.00	1.39	
	0.00	0.00	0.00	.13	0.00	0.00	.13	
NNW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
N	0	0	1	0	0	0	1	4.27
	0.00	0.00	1.39	0.00	0.00	0.00	1.39	
	0.00	0.00	.13	0.00	0.00	0.00	.13	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	5	10	32	19	5	72	5.45
	1.39	6.94	13.89	44.44	26.39	6.94	100.00	
	.13	.67	1.34	4.30	2.55	.67	9.68	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-195

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY.1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	4.74
ENE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	4.74
E	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	4.97
ESE	0 0.00 0.00	0 0.00 0.00	4 7.69 .54	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	5 9.62 .67	4.74
SE	0 0.00 0.00	2 3.85 .27	5 11.54 .81	2 3.85 .27	1 1.92 .13	0 0.00 0.00	11 21.15 1.48	5.00
SSE	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	4 7.69 .54	4 7.69 .54	1 1.92 .13	10 19.23 1.34	7.39
S	0 0.00 0.00	1 1.92 .13	4 7.69 .54	7 13.46 .94	4 7.69 .54	1 1.92 .13	17 32.69 2.28	6.33
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	0 0.00 0.00	0 0.00 0.00	2 3.85 .27	6.61
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	1 1.92 .13	7.58
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	4.27
NW	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.92 .13	4.27
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00	3 5.77	20 38.46	17 32.69	10 19.23	2 3.85	52 100.00	5.94
	0.00	.40	2.69	2.28	1.34	.27	6.99	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-196

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	3	1	1	0	0	5	3.51
	0.00	1.04	.35	.35	0.00	0.00	1.74	
	0.00	.40	.13	.13	0.00	0.00	.67	
NE	0	3	6	1	0	0	10	3.70
	0.00	1.04	2.08	.35	0.00	0.00	3.47	
	0.00	.40	.81	.13	0.00	0.00	1.34	
ENE	1	5	7	1	0	0	14	3.18
	.35	1.74	2.43	.35	0.00	0.00	4.86	
	.13	.67	.94	.13	0.00	0.00	1.88	
E	0	4	12	3	0	0	19	4.07
	0.00	1.39	4.17	1.04	0.00	0.00	6.60	
	0.00	.54	1.61	.40	0.00	0.00	2.55	
ESE	0	4	9	11	2	0	26	4.89
	0.00	1.39	3.12	3.82	.69	0.00	9.03	
	0.00	.54	1.21	1.48	.27	0.00	3.49	
SE	0	12	23	9	1	0	45	3.97
	0.00	4.17	7.99	3.12	.35	0.00	15.62	
	0.00	1.61	3.09	1.21	.13	0.00	6.05	
SSE	0	2	26	30	12	0	70	5.75
	0.00	.69	9.03	10.42	4.17	0.00	24.31	
	0.00	.27	3.49	4.03	1.61	0.00	9.41	
S	0	4	11	27	11	2	55	6.11
	0.00	1.39	3.82	9.37	3.82	.69	19.10	
	0.00	.54	1.48	3.63	1.48	.27	7.39	
SSW	0	3	5	5	2	14	6.52	
	0.00	1.04	.69	.69	1.74	.69	4.86	
	0.00	.40	.27	.27	.67	.27	1.88	
SW	0	1	2	1	3	2	9	7.11
	0.00	.35	.69	.35	1.04	.69	3.12	
	0.00	.13	.27	.13	.40	.27	1.21	
WSW	0	0	0	1	1	0	2	7.11
	0.00	0.00	0.00	.35	.35	0.00	.69	
	0.00	0.00	0.00	.13	.13	0.00	.27	
W	0	1	3	1	1	0	6	4.98
	0.00	.35	1.04	.35	.35	0.00	2.08	
	0.00	.13	.40	.13	.13	0.00	.81	
WNW	0	0	4	1	0	0	5	4.55
	0.00	0.00	1.39	.35	0.00	0.00	1.74	
	0.00	0.00	.54	.13	0.00	0.00	.67	
NW	0	0	1	1	0	0	2	4.50
	0.00	0.00	.35	.35	0.00	0.00	.69	
	0.00	0.00	.13	.13	0.00	0.00	.27	
NNW	0	2	1	0	0	0	3	3.00
	0.00	.69	.35	0.00	0.00	0.00	1.04	
	0.00	.27	.13	0.00	0.00	0.00	.40	
N	0	3	0	0	0	0	3	2.68
	0.00	1.04	0.00	0.00	0.00	0.00	1.04	
	0.00	.40	0.00	0.00	0.00	0.00	.40	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	1	47	108	90	36	6	288	5.10
	.35	16.32	37.50	31.25	12.50	2.08	100.00	
	.13	6.32	14.52	12.10	4.84	.81	38.71	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-197

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY.1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .48 .13 0	2 .96 .27 3	0 0.00 0.00 0	0 0.00 0.00 0	0 0.00 0.00 0	0 0.00 0.00 0	3 1.44 .40 3	2.21
NE	0 0.00 0.00 2	3 1.44 .40 5	0 0.00 0.00 1	0 0.00 0.00 0	0 0.00 0.00 0	0 0.00 0.00 0	3 1.44 .40 8	2.37
ENE	.96 .27 0	2.40 .67 5	.48 .13 4	0.00 0.00 1	0.00 0.00 0	0.00 0.00 0	3.85 1.08 11	2.43
E	0.00 0.00 0	2.88 .81 8	1.92 .54 10	.48 .13 1	0.00 0.00 0	0.00 0.00 0	5.29 1.46 19	3.32
ESE	0.00 0.00 2	3.85 1.08 13	4.81 1.34 23	.48 .13 5	0.00 0.00 0	0.00 0.00 0	9.13 2.55 43	3.24
SE	.96 .27 5	6.25 1.75 13	11.06 3.09 12	2.40 .67 6	0.00 0.00 1	0.00 0.00 1	20.67 5.78 38	3.49
S	2.40 .67 3	6.25 1.75 9	5.77 1.61 12	2.88 .81 10	.48 .13 1	.48 .13 0	18.27 5.11 35	3.69
SSW	1.44 .40 0	4.33 1.21 2	5.77 1.61 3	4.81 1.34 4	.48 .13 1	0.00 0.00 0	16.83 4.70 10	4.15
SW	0.00 0.00 0	.96 .27 0	1.44 .40 1	1.92 .54 0	.48 .13 0	0.00 0.00 0	4.81 1.34 1	4.98
WSW	0.00 0.00 0	0.00 0.00 2	.48 .13 1	0.00 0.00 1	0.00 0.00 0	0.00 0.00 0	.48 .13 4	3.79
W	0.00 0.00 2	.96 .27 2	.48 .13 4	.48 .13 0	0.00 0.00 0	0.00 0.00 0	1.92 .54 8	4.03
WNW	.96 .27 0	.96 .27 0	1.92 .54 2	0.00 0.00 6	0.00 0.00 0	0.00 0.00 0	3.85 1.08 2	3.02
NW	0.00 0.00 0	0.00 0.00 1	.96 .27 0	0.00 0.00 0	0.00 0.00 0	0.00 0.00 0	.96 .27 1	4.50
NNW	0.00 0.00 1	.48 .13 5	0.00 0.00 2	0.00 0.00 0	0.00 0.00 0	0.00 0.00 0	.48 .13 8	2.44
N	.48 .13 1	2.40 .67 12	.96 .27 1	0.00 0.00 0	0.00 0.00 0	0.00 0.00 0	3.85 1.08 14	2.49
CALM	.48 .13 0	5.77 1.61	.48 .13	0.00 0.00	0.00 0.00	0.00 0.00	5.73 1.88	2.34
TOTAL	0.00 0.00 17 8.17 2.28	83 39.90 11.16	76 36.54 10.22	28 13.46 3.76	3 1.44 .40	1 .48 .13	0 0.00 0.00 208 100.00 27.96	CALM 3.49

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-198

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 1.96 .13	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	1.42
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	.95
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	2 3.92 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	1.40
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	1 1.96 .13	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	1.42
S	1 1.96 .13	7 13.73 .94	3 5.88 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	11 21.57 1.48	2.84
SSW	0 0.00 0.00	0 0.00 0.00	3 5.88 .40	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 5.88 .40	4.11
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 1.96 .13	3.79
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	2 3.92 .27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 3.92 .27	2.37
NNW	4 7.84 .54	4 7.84 .54	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	8 15.69 1.08	1.72
N	11 21.57 1.48	8 15.69 1.08	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	19 37.25 2.55	1.57
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	19 37.25 2.55	25 49.02 3.36	7 13.73 .94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	51 100.00 6.85	2.08

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-199

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
S	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
N	0 0.00 0.00	1 100.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 100.00 .13	1.90
CALM	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00 CALM
TOTAL	0 0.00 0.00	1 100.00 .13	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 100.00 .13	1.90

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-200

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: MAY,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC PWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 .27	6 .81	1 .13	1 .13	0 0.00	0 0.00	10 1.34	2.70
NE	0 0.00	6 .81	10 1.34	1 .13	0 0.00	0 0.00	17 2.28	3.71
ENE	4 .54	10 1.34	9 1.21	1 .13	0 0.00	0 0.00	24 3.23	2.90
E	0 0.00	10 1.34	18 2.42	5 .67	0 0.00	0 0.00	33 4.44	3.88
ESE	0 0.00	15 2.02	25 3.36	13 1.75	3 .40	0 0.00	56 7.53	4.21
SE	2 .27	28 3.76	54 7.26	21 2.82	2 .27	0 0.00	107 14.38	3.97
SSE	7 .94	17 2.28	39 5.24	57 7.66	26 3.49	5 .67	151 20.30	5.50
S	4 .54	23 3.09	33 4.44	66 8.87	35 4.70	5 .67	166 22.31	5.79
SSW	0 0.00	6 .81	8 1.08	12 1.61	14 1.88	4 .54	44 5.91	6.46
SW	0 0.00	2 .27	3 .40	1 .13	6 .81	2 .27	14 1.88	6.77
WSW	0 0.00	4 .54	1 .13	2 .27	2 .27	2 .27	11 1.48	6.07
W	2 .27	3 .40	9 1.21	1 .13	2 .27	3 .40	20 2.69	5.17
WNW	0 0.00	2 .27	7 .94	1 .13	0 0.00	0 0.00	10 1.34	4.08
NW	0 0.00	4 .54	2 .27	8 1.08	4 .54	0 0.00	18 2.42	5.50
NNW	5 .67	12 1.61	4 .54	1 .13	0 0.00	0 0.00	22 2.96	2.52
N	12 1.61	23 3.09	3 .40	3 .40	0 0.00	0 0.00	41 5.51	2.37
CALM	0 0.00						0 0.00	CALM
TOTAL	38 5.11	171 22.98	226 30.38	194 26.08	94 12.63	21 2.82	744 100.00	4.81

NUMBER OF VALID OBSERVATIONS	744	100.00 PCT.
NUMBER OF INVALID OBSERVATIONS	0	0.00 PCT.
TOTAL NUMBER OF OBSERVATIONS	744	100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

Revision 1
1/78

TABLE 5-201

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL A
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	14	10	4	2	0	30	3.85
	0.00	6.64	4.74	1.90	.95	0.00	14.22	
	0.00	1.94	1.39	.56	.28	0.00	4.17	
NE	0	4	1	0	0	0	5	2.65
	0.00	1.90	.47	0.00	0.00	0.00	2.37	
	0.00	.56	.14	0.00	0.00	0.00	.69	
ENE	0	5	1	0	0	0	7	2.77
	0.00	2.84	.47	0.00	0.00	0.00	3.32	
	0.00	.83	.14	0.00	0.00	0.00	.97	
E	0	5	1	2	0	0	8	3.49
	0.00	2.37	.47	.95	0.00	0.00	3.79	
	0.00	.69	.14	.28	0.00	0.00	1.11	
ESE	0	3	2	0	2	0	7	4.67
	0.00	1.42	.95	0.00	.95	0.00	3.32	
	0.00	.42	.28	0.00	.28	0.00	.97	
SE	0	1	7	4	4	0	16	5.51
	0.00	.47	3.32	1.90	1.90	0.00	7.58	
	0.00	.14	.97	.56	.56	0.00	2.22	
SSE	0	2	1	9	5	0	17	6.27
	0.00	.95	.47	4.27	2.37	0.00	8.06	
	0.00	.28	.14	1.25	.69	0.00	2.36	
S	0	0	1	8	5	1	15	6.83
	0.00	0.00	.47	3.79	2.37	.47	7.11	
	0.00	0.00	.14	1.11	.69	.14	2.08	
SSW	0	0	1	1	6	4	12	8.85
	0.00	0.00	.47	.47	2.84	1.90	5.69	
	0.00	0.00	.14	.14	.83	.56	1.67	
SW	0	1	4	0	2	0	7	4.94
	0.00	.47	1.90	0.00	.95	0.00	3.32	
	0.00	.14	.56	0.00	.28	0.00	.97	
WSW	0	1	4	2	0	0	7	5.32
	0.00	.47	1.90	.95	.95	0.00	4.27	
	0.00	.14	.56	.28	.28	0.00	1.25	
W	0	2	2	2	1	0	7	4.89
	0.00	.95	.95	.95	.47	0.00	3.32	
	0.00	.28	.28	.28	.14	0.00	.97	
WNW	0	2	2	5	1	0	10	5.18
	0.00	.95	.95	2.37	.47	0.00	4.74	
	0.00	.28	.28	.69	.14	0.00	1.39	
NW	0	0	0	4	0	0	4	6.71
	0.00	0.00	0.00	1.90	0.00	0.00	1.90	
	0.00	0.00	0.00	.56	0.00	0.00	.56	
NNW	0	0	4	11	3	0	18	5.90
	0.00	0.00	1.90	5.21	1.42	0.00	8.53	
	0.00	0.00	.56	1.53	.42	0.00	2.50	
N	0	10	13	7	8	1	39	5.04
	0.00	4.74	6.16	3.32	3.79	.47	18.48	
	0.00	1.39	1.81	.97	1.11	.14	5.42	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	2	51	54	59	41	6	211	5.26
	0.00	24.17	25.59	27.96	19.43	2.84	100.00	
	0.00	7.08	7.50	8.19	5.69	.83	29.31	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-202

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE.1,77

STABILITY CLASS: PASQUILL B
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0	1	3	1	0	0	5	4.08
	0.00	1.61	4.84	1.61	0.00	0.00	8.06	
	0.00	.14	.42	.14	0.00	0.00	.69	
NE	0	0	0	1	0	0	1	5.21
	0.00	0.00	0.00	1.61	0.00	0.00	1.61	
	0.00	0.00	0.00	.14	0.00	0.00	.14	
ENE	0	2	3	1	0	0	6	3.87
	0.00	3.23	4.84	1.61	0.00	0.00	9.68	
	0.00	.28	.42	.14	0.00	0.00	.83	
E	0	0	1	1	0	0	2	4.26
	0.00	0.00	1.61	1.61	0.00	0.00	3.23	
	0.00	0.00	.14	.14	0.00	0.00	.28	
ESE	0	1	2	0	3	0	6	5.53
	0.00	1.61	3.23	0.00	4.84	0.00	9.68	
	0.00	.14	.28	0.00	.42	0.00	.83	
SE	0	0	4	1	3	0	8	5.75
	0.00	0.00	6.45	1.61	4.84	0.00	12.90	
	0.00	0.00	.56	.14	.42	0.00	1.11	
SSE	0	2	0	2	0	0	4	4.62
	0.00	3.23	0.00	3.23	0.00	0.00	6.45	
	0.00	.28	0.00	.28	0.00	0.00	.56	
S	0	2	2	2	1	0	7	4.74
	0.00	3.23	3.23	3.23	1.61	0.00	11.29	
	0.00	.28	.28	.28	.14	0.00	.97	
SSW	0	0	2	2	2	1	7	6.64
	0.00	0.00	3.23	3.23	3.23	1.61	11.29	
	0.00	0.00	.28	.28	.28	.14	.97	
SW	0	0	5	0	1	0	6	4.98
	0.00	0.00	8.06	0.00	1.61	0.00	9.68	
	0.00	0.00	.69	0.00	.14	0.00	.83	
WSW	0	0	0	1	0	0	1	6.16
	0.00	0.00	0.00	1.61	0.00	0.00	1.61	
	0.00	0.00	0.00	.14	0.00	0.00	.14	
W	0	0	1	3	0	0	4	5.93
	0.00	0.00	1.61	4.84	0.00	0.00	6.45	
	0.00	0.00	.14	.42	0.00	0.00	.56	
WNW	0	0	1	0	0	0	1	3.79
	0.00	0.00	1.61	0.00	0.00	0.00	1.61	
	0.00	0.00	.14	0.00	0.00	0.00	.14	
NW	0	0	0	0	0	0	0	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NNW	0	0	0	1	0	0	1	5.21
	0.00	0.00	0.00	1.61	0.00	0.00	1.61	
	0.00	0.00	0.00	.14	0.00	0.00	.14	
N	0	1	1	1	0	0	3	4.42
	0.00	1.61	1.61	1.61	0.00	0.00	4.84	
	0.00	.14	.14	.14	0.00	0.00	.42	
CALM	0						0	CALM
	0.00						0.00	
	0.00						0.00	
TOTAL	0	9	25	17	10	1	62	5.11
	0.00	14.52	40.32	27.42	16.13	1.61	100.00	
	0.00	1.25	3.47	2.36	1.39	.14	8.61	

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-203

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL C
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	3 11.54 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 11.54 .42	2.68
NE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	3.79
ENE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	3.79
E	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	3.79
ESE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	1 3.85 .14	0 0.00 0.00	2 7.69 .28	6.87
SE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
SSE	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	4.74
S	0 0.00 0.00	1 3.85 .14	1 3.85 .14	1 3.85 .14	1 3.85 .14	0 0.00 0.00	4 15.38 .56	5.45
SSW	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	2 7.69 .28	0 0.00 0.00	0 0.00 0.00	3 11.54 .42	4.74
SW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	6.64
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	0 0.00 0.00	2 7.69 .28	4.26
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 .14	0 0.00 0.00	1 3.85 .14	7.58
N	0 0.00 0.00	1 3.85 .14	4 15.38 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 19.23 .69	3.89
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	0 0.00 0.00	8 30.77 1.11	9 34.62 1.25	6 23.08 .83	3 11.54 .42	0 0.00 0.00	26 100.00 3.61	4.61

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-204

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL D
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES (METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 .57 .14	3 1.72 .42	5 2.87 .69	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 5.17 1.25	3.37
NE	0 0.00 0.00	5 2.87 .69	6 3.45 .83	1 .57 .17	0 0.00 0.00	0 0.00 0.00	12 6.90 1.67	3.12
ENE	0 0.00 0.00	3 1.72 .42	3 1.72 .42	2 1.15 .28	0 0.00 0.00	0 0.00 0.00	8 4.60 1.11	3.61
E	1 .57 .14	3 1.72 .42	9 5.17 1.25	5 2.87 .69	0 0.00 0.00	0 0.00 0.00	18 10.34 2.50	4.21
ESE	0 0.00 0.00	1 .57 .14	10 5.75 1.39	9 5.17 1.25	0 0.00 0.00	0 0.00 0.00	20 11.49 2.78	4.86
SE	1 .57 .14	2 1.15 .28	16 9.20 2.22	6 3.45 .83	0 0.00 0.00	0 0.00 0.00	25 14.37 3.47	4.34
SSE	0 0.00 0.00	0 0.00 0.00	5 2.87 .69	2 1.15 .28	0 0.00 0.00	0 0.00 0.00	7 4.02 .97	4.81
S	0 0.00 0.00	2 1.15 .28	5 2.87 .69	7 4.02 .97	2 1.15 .28	0 0.00 0.00	16 9.20 2.22	5.07
SSW	0 0.00 0.00	0 0.00 0.00	2 1.15 .28	11 6.32 1.53	3 1.72 .42	0 0.00 0.00	16 9.20 2.22	6.34
SW	0 0.00 0.00	1 .57 .14	3 1.72 .42	4 2.30 .56	0 0.00 0.00	0 0.00 0.00	8 4.60 1.11	4.80
WSW	0 0.00 0.00	2 1.15 .28	2 1.15 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.30 .56	3.20
W	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	1 .57 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .57 .14	2.37
NNW	0 0.00 0.00	3 1.72 .42	3 1.72 .42	0 0.00 0.00	1 .57 .14	1 .57 .14	8 4.60 1.11	5.15
N	1 .57 .14	8 4.60 1.11	7 4.02 .97	6 3.45 .83	0 0.00 0.00	0 0.00 0.00	22 12.64 3.06	3.77
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	4 2.30 .56	34 19.54 4.72	76 43.68 10.56	53 30.46 7.36	6 3.45 .83	1 .57 .14	174 100.00 24.17	4.44

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

Revision 1
1/78

TABLE 5-205

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL E
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	2 1.16 .28	3 1.74 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 2.91 .69	1.80
NE	0 0.00 0.00	1 .58 .14	0 0.00 0.00	1 .58 .14	0 0.00 0.00	0 0.00 0.00	2 1.16 .28	3.55
ENE	0 0.00 0.00	3 1.74 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 1.74 .42	2.53
E	1 .58 .14	1 .58 .14	2 1.16 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.33 .56	2.96
ESE	0 0.00 0.00	4 2.33 .56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 2.33 .56	2.25
SE	1 .58 .14	9 5.23 1.25	19 11.05 2.64	1 .58 .14	0 0.00 0.00	0 0.00 0.00	30 17.44 4.17	3.29
SSE	1 .58 .14	9 5.23 1.25	5 2.91 .69	1 .58 .14	0 0.00 0.00	0 0.00 0.00	16 9.30 2.22	3.05
S	0 0.00 0.00	7 4.07 .97	20 11.63 2.78	3 1.74 .42	0 0.00 0.00	0 0.00 0.00	30 17.44 4.17	3.73
SSW	0 0.00 0.00	1 .58 .14	6 3.49 .83	1 .58 .14	0 0.00 0.00	0 0.00 0.00	8 4.65 1.11	4.15
SW	2 1.16 .28	1 .58 .14	3 1.74 .42	9 5.23 1.25	0 0.00 0.00	0 0.00 0.00	15 8.72 2.08	4.80
WSW	1 .58 .14	1 .58 .14	1 .58 .14	1 .58 .14	0 0.00 0.00	0 0.00 0.00	4 2.33 .56	3.32
W	0 0.00 0.00	4 2.33 .56	0 0.00 0.00	1 .58 .14	1 .58 .14	0 0.00 0.00	6 3.49 .83	3.56
WNW	0 0.00 0.00	1 .58 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 .58 .14	1.90
NW	1 .58 .14	1 .58 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 1.16 .28	1.89
NNW	1 .58 .14	1 .58 .14	1 .58 .14	0 0.00 0.00	0 0.00 0.00	1 .58 .14	4 2.33 .56	4.50
N	4 2.33 .56	24 13.95 3.33	10 5.81 1.39	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	38 22.09 5.28	2.68
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	14 8.14 1.94	71 41.28 9.86	67 38.95 9.31	18 10.47 2.50	1 .58 .14	1 .58 .14	172 100.00 23.89	3.31

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-206

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL F
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
[illegible], NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	1.42
NE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
ENE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
E	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	1.18
ESE	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 .28	1.42
SE	1 2.22 .14	2 4.44 .28	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 8.89 .56	2.72
SSE	1 2.22 .14	2 4.44 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.67 .42	1.74
S	2 4.44 .28	7 15.56 .97	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	10 22.22 1.39	2.32
SSW	1 2.22 .14	1 2.22 .14	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 6.67 .42	2.68
SW	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.22 .14	4.27
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	2 4.44 .28	1 2.22 .14	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	4 8.89 .56	3.44
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	1 2.22 .14	5 11.11 .69	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 13.33 .83	1.90
N	1 2.22 .14	8 17.78 1.11	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9 20.00 1.25	2.06
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	12 26.67 1.67	27 60.00 3.75	5 11.11 .69	1 2.22 .14	0 0.00 0.00	0 0.00 0.00	45 100.00 6.25	2.26

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-207

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

STABILITY CLASS: PASQUILL G
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NE	1 3.33 .14	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	1.66
ENE	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.33 .14	1.42
E	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.33 .14	.95
ESE	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	.95
SE	3 10.00 .42	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 10.00 .42	1.26
SSE	1 3.33 .14	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	1.66
S	0 0.00 0.00	5 16.67 .69	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 16.67 .69	2.13
SSW	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	1.42
SW	0 0.00 0.00	1 3.33 .14	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.33 .14	1.90
WSW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
W	0 0.00 0.00	5 16.67 .69	0 0.00 0.00	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	7 23.33 .97	3.05
WNW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NW	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0.00
NNW	0 0.00 0.00	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	1.90
N	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 6.67 .28	1.42
CALM	0 0.00 0.00						0 0.00 0.00	CALM
TOTAL	13 43.33 1.81	15 50.00 2.08	0 0.00 0.00	2 6.67 .28	0 0.00 0.00	0 0.00 0.00	30 100.00 4.17	1.94

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES THIS CLASS
XXX PERCENT OCCURRENCES ALL CLASSES

1

Revision 1
1/78

TABLE 5-208

JOINT WIND FREQUENCY DISTRIBUTION BY STABILITY CLASS
DATA PERIOD: JUNE,1977

ALL CLASSES
DATA SOURCE: ON-SITE
WIND SENSOR HEIGHT: 10.67 METERS
TABLE GENERATED: 01/03/78. 13.20.55.

COOPER NUCLEAR STATION
NEMAHA, NEBRASKA
NEBRASKA PUBLIC POWER DISTRICT
DAMES AND MOORE JOB NO: 7635-003-07

WIND SECTOR	WIND SPEED CATEGORIES(METERS PER SECOND) 0.0-1.5	1.5-3.0	3.0-5.0	5.0-7.5	7.5-10.0	>10.0	TOTAL	MEAN SPEED
NNE	4 .56	24 3.33	18 2.50	5 .69	2 .28	0 0.00	53 7.36	3.49
NE	1 .14	11 1.53	8 1.11	3 .42	0 0.00	0 0.00	23 3.19	3.05
ENE	1 .14	14 1.94	8 1.11	3 .42	0 0.00	0 0.00	26 3.61	3.24
E	5 .69	10 1.39	14 1.94	8 1.11	0 0.00	0 0.00	37 5.14	3.65
ESE	4 .56	9 1.25	14 1.94	10 1.39	6 .83	0 0.00	43 5.97	4.43
SE	6 .83	14 1.94	47 6.53	12 1.67	7 .97	0 0.00	86 11.94	4.14
SSE	3 .42	16 2.22	12 1.67	14 1.94	5 .69	0 0.00	50 6.94	4.42
S	2 .28	24 3.33	30 4.17	21 2.92	9 1.25	1 .14	87 12.08	4.42
SSW	3 .42	3 .42	12 1.67	17 2.36	11 1.53	5 .69	51 7.08	6.12
SW	2 .28	4 .56	16 2.22	14 1.94	3 .42	0 0.00	39 5.42	4.81
WSW	1 .14	4 .56	7 .97	4 .56	2 .28	0 0.00	18 2.50	4.45
W	0 0.00	14 1.94	4 .56	10 1.39	2 .28	0 0.00	30 4.17	4.10
WNW	0 0.00	3 .42	3 .42	5 .69	1 .14	0 0.00	12 1.67	4.79
NW	1 .14	2 .28	0 0.00	4 .56	0 0.00	0 0.00	7 .97	4.71
NNW	2 .28	11 1.53	8 1.11	12 1.67	5 .69	2 .28	40 5.56	4.84
N	8 1.11	52 7.22	35 4.86	14 1.94	8 1.11	1 .14	118 16.39	3.69
CALM	0 0.00						0 0.00	CALM
TOTAL	43 5.97	215 29.86	236 32.78	156 21.67	61 8.47	9 1.25	720 100.00	4.23

NUMBER OF VALID OBSERVATIONS 720 100.00 PCT.
NUMBER OF INVALID OBSERVATIONS 0 .00 PCT.
TOTAL NUMBER OF OBSERVATIONS 720 100.00 PCT.

KEY XXX NUMBER OF OCCURRENCES
XXX PERCENT OCCURRENCES

1

Revision 1
1/78

Nebraska Public Power District

Cooper Nuclear Station

Demonstration of Compliance With 10CFR50, Appendix I Supplement 2

January 9, 1978

I. INTRODUCTION

This Supplement No. 2 to the report "Demonstration of Compliance with 10 CFR 50, Appendix I, January 12, 1977" has been prepared in response to the Nuclear Regulatory Commission (NRC) Request for Additional Information, Cooper Nuclear Station Docket No. 50-298, Meteorology - Round II, dated August 22, 1977. This document responds to the two items for which information was requested.

Question 10:

The response to Question 4 (Refer to NRC letter, D. Davis to J. Pilant, dated March 24, 1977) indicates substantial differences between wind direction measurements at the 96.93m and 10.67m levels, particularly during stable atmospheric conditions. The response concludes that "the large differences in the two wind directions are unexplainable at this time." However, wind direction frequency is a very important parameter in the calculation of annual average relative concentrations (X/Q) and relative deposition (D/Q) values; and the differences in wind direction at the two levels may bias the X/Q and D/Q values calculated at specific receptor locations for ground-level releases.

a. Discuss further the difference in wind direction measurements between the 96.93m and 10.67m levels, particularly during stable atmospheric conditions.

b. Indicate if there is a pronounced directional bias that could result in substantial underestimation of calculated X/Q and D/Q values at specific receptor locations.

c. Identify the joint frequency distribution of wind speed and direction by atmospheric stability that is considered most representative of atmospheric transport and diffusion characteristics for ground-level releases.

Response 10:

In preparing a response to this question, NPPD's consultant, Dames & Moore, conducted an extensive investigation of the data set used to calculate the X/Q and D/Q values presented in the "Demonstration of Compliance with 10 CFR 50, Appendix I, January 12, 1977". This investigation led to the conclusion that the most representative data set for transport and diffusion characteristics for ground-level releases was that gathered during the one year period from July 1, 1976 to June 30, 1977. This period was not included in the 5-year period used in the original analysis. Recently, this year of data was used as input to Dames & Moore's "PUFF" model to compile X/Q and D/Q values, and the results are presented in "Demonstration of Compliance with 10 CFR 50, Appendix I, Revised, January 1978".

Because a new set of data has been used to demonstrate compliance, an answer to Question 10 is considered not applicable.

Question 11-a:

The accuracy of the sensor used for the temperature difference measurement appears to be $\pm 0.26^{\circ}C$ at $0^{\circ}C$. Provide an estimate of the accuracy of measurement through the entire data collection and reduction system.

Response 11-a:

The equipment accuracies for the Rosemount delta-temperature system presented in Table 8.1 of Supplement No. 1 were obtained from the equipment manufacturer and, in fact, apply to the sensor temperature range of $-100^{\circ}C$ to $+500^{\circ}C$. The manufacturer has recently determined the accuracy for a virtually identical delta-temperature measurement system using the assumptions:

1. Ambient temperature measurement range of $-50^{\circ}C$ to $+50^{\circ}C$;
2. Delta-temperature measurement range of $-4^{\circ}C$ to $+6^{\circ}C$; and
3. Bridge circuitry ambient temperature stable to $\pm 10^{\circ}F$.

Since the above assumptions apply to the system under discussion, it is estimated that the system error for the delta-temperature parameter is $\pm 0.19^{\circ}C$. This error, calculated by the root sum square method, is comprised of the following component errors:

1. Delta temperature probes and bridge error (include calibration equipment error) $\pm 0.155^{\circ}C$

2.	Recorder error (±0.5% FS = 0.175°F or 0.097°C)	±0.097°C
3.	Data reduction resolution (estimated)	±0.05°C

Question 11-b:

Discuss the measurement of vertical temperature gradient in greater detail and identify any impacts on the calculations of X/Q and D/Q for the Cooper site.

Response 11-b:

The vertical temperature gradient parameter is obtained by directly recording the electric potential difference between the outputs of the upper and lower sensor bridges with the Honeywell recorder. The temperature sensors are installed in Teledyne Geotech aspirated radiation shields. The aspirater intake is approximately 3 meters from the tower structure.

The equipment maintenance records and data set have been examined. It has been determined that there may exist an error toward unstable stability classifications. This error is non-conservative for ground-level releases but will result in conservative estimates of elevated releases.